

actions and/or requirements; § 13.533-45 Maintain records. Subpart—Misrepresenting Oneself and Goods—Goods: § 13.1575 Comparative data or merits; § 13.1605 Content; § 13.1710 Qualities or properties; § 13.1730 Results; § 13.1740 Scientific or other relevant facts; § 13.1672 Tests, purported.

List of Subjects in 16 CFR Part 13

Nutritional supplements, Trade practices.

(Sec. 6, 38 Stat. 721; 15 U.S.C. 46. Interprets or applies sec. 5, 38 Stat. 719, as amended; 15 U.S.C. 45, 52)

Emily H. Rock,

Secretary.

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DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

18 CFR Part 37

[Docket No. RM84-15-000; Order No. 420]

Generic Determination of Rate of Return on Common Equity for Public Utilities

Issued: May 20, 1985.

AGENCY: Federal Energy Regulatory Commission, DOE.

ACTION: Final rule.

SUMMARY: The Federal Energy Regulatory Commission (Commission) determines that the average cost of common equity for the jurisdictional operations of electric utilities during the year ending June 30, 1984 was 15.31 percent.

The Commission also amends Part 37 of its regulations to include a quarterly indexing procedure to update this cost estimate and provide benchmark rates of return. The quarterly indexing procedure adopted by the Commission is based on fixed adjustment factors determined in this proceeding and changes in the average dividend yield (measured by the median) for a broad-based sample of 100 utilities.

Application of the quarterly indexing procedure to data for the first calendar quarter of 1985 produces a benchmark rate of return on common equity of 14.46 percent. This benchmark applies to rate filings made by utilities during the period beginning July 1 and ending July 31, 1985. New benchmarks will be established for filings made after July 31 in accordance with the quarterly

indexing procedure determined in this proceeding.

As indicated in § 37.8 of the Commission's regulations, these benchmark rates of return are advisory only. The benchmark rates established as a result of this proceeding are intended to guide companies and intervenors in individual rate cases and to serve as a reference point for the Commission in its deliberations. The Commission may take official notice of them in individual rate proceedings.

EFFECTIVE DATE: The final rule is effective June 28, 1985.

FOR FURTHER INFORMATION CONTACT:

Arnold H. Meltz, Office of Regulatory Analysis, Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, D.C. 20426, (202) 357-8149

or

Ronald L. Rattey, Office of Regulatory Analysis, Federal Energy Regulatory Commission, 825 North Capitol Street, NE., Washington, D.C. 20426, (202) 357-8015.

SUPPLEMENTARY INFORMATION:

Before Commissioners: Raymond J. O'Connor, Chairman; A.G. Sousa, Oliver G. Richard III, and Charles G. Stalon.

In the matter of generic determination of rate of return on common equity for public utilities; Docket No. RM84-15-000; Order No. 420; Final Rule.

Issued May 20, 1985.

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I. Introduction and Summary of Conclusions

In accordance with the new Part 37 of its regulations, the Federal Energy Regulatory Commission (Commission) is determining in this order: (1) The average cost of common equity for the jurisdictional operations of public utilities¹ for the year ending June 30, 1984; and (2) a quarterly indexing procedure to update the cost estimate and establish benchmark rates of return on common equity for use in individual rate cases. The benchmark rates of return established in this year's proceeding are advisory only.

As detailed below, the Commission estimates that the average cost of common equity for the jurisdictional operations of electric utilities during the year ending June 30, 1984 (hereinafter referred to as the "base year") was 15.31 percent.

The Commission also amends Part 37 of its regulations to include a quarterly indexing procedure to update this cost estimate and provide benchmark rates of return. The quarterly indexing procedure adopted by the Commission is based on fixed adjustment factors determined in this proceeding and changes in the average dividend yield (measured by the median) for a broad-based sample of 100 electric utilities.

Application of the quarterly indexing procedure to data for the first calendar quarter of 1985 produces a benchmark rate of return on common equity of 14.46 percent. This benchmark applies to rate filings made by utilities during the period beginning July 1 and ending July 31, 1985. New benchmarks will be established for filings made after July 31

¹ The term "public utilities" and "electric utilities" are used interchangeably.

in accordance with the quarterly indexing procedure determined in this proceeding.

As indicated in § 37.8 of the Commission's regulations, these benchmark rates of return are advisory only. The benchmark rates established as a result of this proceeding are intended to guide companies and intervenors in individual rate cases and to serve as a reference point for the Commission in its deliberations. The Commission may take official notice of them in individual rate proceedings. And the Commission will determine the weight to accord these benchmark rates based on the record in each case. In this regard, the Commission urges participants in rate cases to evaluate the reasonableness of the applicable benchmark in light of any special circumstances of the filing utility.² The Commission is using the results from the initial two year advisory period under Part 37 as a test of the likely consequences of moving to a rebuttable presumption standard.

The primary exception to the application of the benchmark rate of return to a utility during a rate case is whether the utility is significantly more or less risky than the average utility. In Order No. 389, the Commission recognized that there will be some uncertainty as to what kind of showing will be required to substantiate a contention that the risk of the subject company is significantly different from the electric utility industry average.³ Generally, Commission analysis of the relative risk issue in individual cases will provide guidance to parties regarding the risk issue. In addition, the Commission requested Commission staff to prepare and make available a periodic electric utility industry profile report containing industry average data on significant financial and operating parameters that would be useful in evaluating the relative risk issue. Copies of the staff's first industry profile report are now publicly available through the Commission's Division of Public Information.⁴

II. Background

Section 205(a) of the Federal Power Act requires that all electric rates

subject to the jurisdiction of the Commission be "just and reasonable."⁵ In the exercise of this statutory responsibility, the Commission seeks to set rates of return on common equity that are fair to both ratepayers and stockholders. The current market cost of common equity⁶ to the regulated utility is viewed as the proper cost-based standard for this purpose.⁷ The cost of common equity is the minimum rate of return investors require from a company's common stock (hereinafter referred to as the required rate of return) plus an allowance for the costs associated with selling new common stock, i.e. flotation costs, where appropriate.⁸

As the Commission has observed,⁹ it has been difficult to apply this cost standard to allowed rates of return on common equity primarily because of two reasons. First, the cost is not directly observable and so it must be estimated. Second, it changes continually as capital market conditions change. This is the essence of the problem.

Currently, the allowed rate of return on common equity is determined individually for each utility on a case by case basis. In July 1984, however, the Commission implemented procedures for generically determining benchmark rates of return on common equity and for applying them in individual cases.¹⁰

The new rule does not alter the cost-based standard for rates of return. Rather it modifies the application of the standard. The benchmark rates of return are based on the industry average costs of common equity and are intended to

be reasonable estimates of the costs to most utilities.¹¹

In implementing these procedures, the Commission has three purposes: (1) To produce more accurate and consistent rate of return decisions, (2) to involve the Commission more directly and currently in a consideration of the financial and operating circumstances of the electric utility industry, and (3) ultimately to reduce some of the burdens that rate filings impose on applicants, intervenors, and the Commission.

Under these procedures and after an initial two year "advisory" period, a rebuttable presumption is created in each rate case that the allowed rate of return on common equity should be the benchmark rate of return in effect at the time of filing unless one of three exceptions applies. The primary exception is where the utility is significantly more or less risky than average. The rule also allows for a rate of return different from the benchmark when there is a settlement between parties or when there is a finding of undue discrimination. Thus, instead of parties devoting substantial resources to evaluating the cost to individual utilities in individual rate cases, Part 37 has the industry average cost determined in an annual rulemaking proceeding and, in general, focuses attention on individual companies only when there is a contention that the subject utility has significantly different risks from the average. And, when this occurs, the rule gives parties to rate proceedings a common basis from which to evaluate their different perceptions of the utility in question.

Conceptually, there are two basic ways to estimate the major component of this cost, the required rate of return on common equity.¹² It can be estimated directly by evaluating its component parts: (1) The risk-free real return reflecting investors' time value of money, (2) the compensation for expected inflation and (3) the compensation for risk. This approach, which has many variants, is referred to

² 16 U.S.C. 824(d)(9)(1982).

³ Alternatively referred to as "market cost of common equity," "cost of common equity," "cost of equity capital," or simply "cost of equity."

⁴ Order No. 389, 49 FR 29946, 29947.

⁵ *Id.* at 29948.

⁶ *Id.* at 29947-48.

⁷ This order represents the culmination of years of discussion and debate reflected in a series of reports. See *Generic Determination of Rate of Return on Common Equity for Electric Utilities*, 47 FR 38332 (Aug. 31, 1982) (Docket no. RM80-38-000) (Notice of Proposed Rulemaking) (issued August 26, 1982); *Establishing the Rate of Return on Equity for Wholesale Electric Sales: Potential Regulatory Reforms* (Dec. 15, 1980), a discussion paper by a Federal Energy Regulatory Commission Staff Study Group; C. Curtis, *Decisional Delay in Wholesale Electric Rate Increase Cases: Causes, Consequences and Possible Remedies* (Jan. 23, 1980), a report submitted to the Congress under section 207(b) of the Public Utility Regulatory Policies Act; Federal Energy Regulatory Commission Advisory Committee on Revision of Rules of Practice and Procedure, *Report of the Subcommittee on the Review of the Decisional Process* (July 26, 1979); *Just and Reasonable Rate of Return on Equity for Natural Gas Pipeline Companies and Public Utilities*, 41 FR 46618 (Oct. 22, 1976), (Docket No. RM77-1) (Notice of Proposed Statement of Policy) (issued Oct. 15, 1976).

⁸ For purposes of this rule, the Commission views the "industry average cost" as synonymous with the cost to the average utility. See Sections III.A.3 and IV.A.2 below.

⁹ Distinguishing methods as direct or indirect is but one way of categorizing the various methods for estimating the cost of common equity. See *Generic Determination of Rate of Return on Common Equity for Electric Utilities*, 47 FR 38332, 38340-41. For other ways, see generally, A.L. Kolbe, and J. Read, Jr. with G. Hall, *The Cost of Capital: Estimating the Rate of Return for Public Utilities* (1984) or R. Morin, *Utilities' Cost of Capital* (1982). Flotation costs, the costs incurred in selling new common stock, are relatively small. See section IV.A.5 below.

¹⁰ *Generic Determination of Rate of Return on Common Equity for Electric Utilities*, 49 FR 29,946 (July 25, 1984) (Docket No. RM80-38-000) (Final Rule) (Order No. 389) (issued July 18, 1984) (to be codified at 18 CFR 37.6).

¹¹ Order No. 389, 49 FR 29,946, 29,954.

¹² The Commission is not publishing staff's Industry Profile Report in the Federal Register. Copies of the Report are available at the Division of Public Information, Room 1000, 825 North Capitol Street, NE, Washington, D.C. 20426 (202) 357-8118.

as the risk premium approach.¹³ Alternatively, the required rate of return can be estimated indirectly on the basis of the return expectations embodied in common stock prices. These return expectations are presumed equal to investor return requirements as they are determined in competitive capital markets. This approach, which also has many variants, is referred to as the so-called discounted cash flow (DCF) approach.¹⁴

In the Notice to this proceeding,¹⁵ the Commission expressed an inclination in favor of the DCF approach, based on its evaluation of the record in Docket No. RM80-36-000. The Commission did not, however, propose any specific DCF model, preferring to address the specifics of the method in its review of the record in this proceeding. It also recognized that other types of analyses could be useful for corroborative purposes and expressly stated that it did not want to foreclose commenters from presenting new and innovative analyses.

With regard to flotation costs, the Commission observed that three approaches seemed to dominate the discussion of how to reflect these costs in utility rates: (1) As an above the line component of the cost of service reflecting these costs as they are incurred, (2) by use of a formula to compute a company specific adjustment to allowed rates of return, or (3) by way of an industry average estimate incorporated in the generic rates of return. The Notice proposed use of the latter, industry average adjustment, approach.¹⁶

¹³ Capital asset pricing and arbitrage pricing models are examples of risk premium methods.

¹⁴ Familiar variants of the discounted cash flow method include the earnings-price and market-to-book ratio methods for evaluating the cost of common equity. They are variants of the general discounted cash flow method since they are based on particular formulations or assumptions as to the cash flow expectations of investors embodied in current stock prices. Statistical market-to-book regression models generally combine elements of both the direct (risk premium) and indirect (DCF) methods. For a more detailed discussion of discounted cash flow theory and application, see A.L. Kolbe, J. Read, with G. Hall, *supra* at Chapter 3; R. Morin, *supra* at Chapters 5-8; M. Gordon, *The Cost of Capital to a Public Utility* (1974); R. Brealey and S. Myers, *Principles of Corporate Finance* (1981) at Chapter 4; and W. Sharpe, *Investments* (1978) at Chapter 12. See also Minnesota Power and Light Company, 3 FERC ¶ 61,045 at 61,133 (1978) Opinion No. 12; Minnesota Power and Light Company, 4 FERC ¶ 61,116 at 61,264 (1978) Opinion No. 20.

¹⁵ Generic Determination of Rate of Return on Common Equity for Public Utilities, 49 FR 29967 (July 25, 1984) (Docket No. RM84-15-000) (Notice of Proposed Rulemaking).

¹⁶ *Id.*

Finally, the Commission proposed an indexing procedure, for updating the benchmark quarterly, based on changes in dividend yields together with a cap of 50 basis points on the quarter-to-quarter changes in the benchmark.¹⁷

In response to the Notice, 37 parties submitted comments—29 individual or groups of utilities, 5 individual or groups of utility customers, and three regulatory commissions or their staffs. In general, the comments were favorable, irrespective of the affiliation of the party that submitted them. Most favored primary reliance on the DCF approach to estimate that cost of common equity and many submitted comprehensive studies estimating the cost during the base year. Most commenters also favored the Commission's proposal to incorporate an estimate of the industry average flotation cost in the benchmark rate of return. Finally, there was general support for the use of a dividend yield-based indexing mechanism and for the imposition of some limit on the quarterly changes in the benchmark.

III. Basic Conclusions and Rationale

A. The Average Cost of Common Equity for Jurisdictional Operations of Electric Utilities for the Year Ending June 30, 1984

The cost of common equity consists of two components: (1) The market required rate of return on common equity and (2) flotation costs. The basis for the Commission's findings on each of these components is discussed below.

In the following sections of this order, the Commission places primary reliance on the discounted cash flow (DCF) approach to estimating the market required rate of return on common equity. The Commission stated an inclination toward this in its Notice, and with few exceptions, commenters devoted their efforts to espousing specific formulations of DCF models.¹⁸ The Commission then chooses the following DCF model to evaluate the market required rate of return for the base year:

$$\text{Model (2) } k = \frac{D_0 (1 + .5g)}{P_0} + g$$

where k = market required rate of return

¹⁷ *Id.* at 29969.

¹⁸ There were two exceptions, APPA and Iowa-Illinois. See Sections IV.A.1 and IV.C.2 below for discussion.

D_0 = current dividend yield (current annual dividend rate divided by current market price)

g = dividend growth rate

The Commission then evaluates the specific components of that DCF model. In particular, the current dividend yield for the base year is estimated as 10.74 percent. The growth rate is estimated as 4.30 percent. Using these values in the above model, the Commission estimates that the market required rate of return for the base year was 15.25 percent:

$$k = (.1074) (1 + (.5) (.0430)) + (.0430) = .1525 = 15.25\%$$

Next, the Commission evaluates the reasonableness of this result by reference to the corroborative evidence submitted by commenters. The Commission concludes that this estimate of the market required rate is consistent with the 12.0-12.25 percent average interest rate on U.S. government bonds during the base year and the 13.5 percent rate on newly issued public utility bonds. It is also consistent with an average market price to book ratio of 92.5 percent, since that evidence suggests that investors would expect average returns on book equity of less than 15 percent for the foreseeable future.

Based on a review and analysis of the comments on flotation costs, the Commission next adjusts the market required rate by 6 basis points to obtain the cost of common equity for the base year of 15.31 percent.

The Commission then reviews the evidence on FERC-jurisdictional risks (vis-a-vis retail risks) and concludes that the record evidence is inconclusive on this issue.

The quarterly indexing procedure assumes the growth rate and flotation cost adjustments are constant. Thus, a formula of the following form is derived for use in computing the quarterly benchmark rates of return:

$$k = a(y) + b$$

where $a = (1 + .5g)$; the first adjustment factor
 y = dividend yield
 b = the growth rate (g) plus the flotation cost allowance; the second adjustment factor

Using the parameters derived in this proceeding, this formula for updating becomes $k = 1.02y + 4.36$, which produces the current benchmark of 14.46 percent, given the dividend yield of 9.90 percent.

1. DCF and Quarterly Dividend Payments

In reviewing the rate of return recommendations of commenters, a major benefit of that almost universal use of DCF model formulations is that

the Commission is given the opportunity to compare and evaluate the assumptions of the commenters. On review of the comments in this proceeding, it quickly becomes apparent that there is a finite number of points of controversy. And, most are amenable to objective solutions based on theoretical grounds.

Under certain assumptions, most notably that expected dividends grow at a constant rate, the DCF model can be reduced to very simple formulations.¹⁹ The two most common forms of the DCF model are:

$$\text{Model (1)} \quad k = \frac{D_0}{P_0} + g$$

$$\text{Model (4)} \quad k = \frac{D_1}{P_0} + g = \frac{D_0(1+g)}{P_0} + g$$

In model (1), the market required rate of return (k) is equal to the current dividend yield—the current dividend rate (D_0) divided by current market price (P_0)—plus the long term growth rate in dividends (g , assumed constant). According to model (4), the market required rate is equal to the expected one year forward dividend yield—the dividend rate one year forward (D_1)—divided by current market price (P_0)—

plus the long term growth rate in dividends. The difference between these models is in the assumption as to when dividends are received. Model (1) assumes continuous receipt of dividends while model (4) assumes that investors receive dividends once a year. Clearly, neither correctly characterizes the real world where dividends are generally paid out to investors on a quarterly basis. This means that some adjustment to these standard models is appropriate.

Aside from the measurement problems surrounding the DCF model parameters, a major controversy among commenters concerned the best way to deal with quarterly dividend payments. After careful consideration of commenters' arguments,²⁰ the Commission has decided on an annual constant growth rate DCF model where the implications of quarterly dividend payments are reflected in an adjustment to the current dividend yield component.

$$\text{Model (1')} \quad k = \frac{D_0(a)}{P_0} + g$$

The adjustment factor (a) is intended to produce a dividend rate value somewhere between the D_0 of the continuous DCF model (Model (1) above) and D_1 of the discrete annual DCF model (Model (4) above). As the Commission has stated in the past,²¹ the

market required rate of return falls somewhere between the values determined by these two models. Investors require a lower rate of return for quarterly dividend receipts beginning this quarter than for annual dividend receipts beginning one year from now because they can reinvest the dividends received under the former schedule. Similarly, investors require a higher rate of return for the receipt of dividends on a quarterly basis than they do for continuous dividend payments because they can reinvest the dividends received under the latter schedule.

The determination as to the exact method of computing the adjustment factor (a) is more difficult. None of the methods proposed by commenters appear to deal with this issue in a precise manner. That is, none of the commenters provided a convincing proof, mathematical or otherwise, showing that their proposed adjustment properly accounts for quarterly dividend payments. Only two methods seem to come close to the "right" adjustment (a).²²

Minnesota Power and Light Company, 4 FERC ¶ 61,116 at 61,265 (1978) (Opinion No. 20); Public Service Co. of Indiana, Inc., 7 FERC ¶ 61,319 at 61,709 (1979) (Opinion No. 44); New England Power Co., 22 FERC ¶ 61,123 at 61,188 (1983) (Opinion No. 158).

²² Equation (1) is incorporated in model (2) of Appendix B. A version of equation (2) which assumes the earliest expected dividend is one quarter away is incorporated in model (3) of Appendix B. Section IV.A.2 below explains how many of the other proposals attempt to incorporate reinvestment of dividends into the model. As explained there, this is inappropriate.

¹⁹ For a general discussion of the DCF model assumptions, see R. Morin, *supra*. Model numbers used in text are from Appendix B.

²⁰ See Section IV.A.1 and Appendix A below.

²¹ See Minnesota Power and Light Company, 3 FERC ¶ 61,045 at 61,133 n. 9 (1978) (Opinion No. 12);

Equation (1) $a = (1 + .5g)$

$$\text{Equation (2) } a = \frac{[1 + (1+g)^{-25} + (1+g)^{-5} + (1+g)^{-75} + (1+g)]}{5}$$

What these methods attempt to do is approximate the average expected annual dividends received during the first year. Assuming that some companies will increase their dividend rate within the first quarter, some during the second quarter, etc., these adjustments attempt to approximate the

average amount of dividends that the average investor (or, equivalently, investors in the average company) would expect to receive during the first year. Since both methods produce approximately the same results within the range of growth rates considered

reasonable,²³ the Commission adopts the method reflected in equation (1) as the appropriate adjustment factor to include in the model (1'). In the case of a 4.3 percent expected growth rate (see below), the adjustment factor (a) equals 1.02 (rounded).

2. Best Ten Commenter Studies

The selection of a particular model goes some distance toward reducing the differences in the recommended rates of return of commenters. But considerable differences remain. These differences are evaluated in detail in the sections that follow.

TABLE 1.—ESTIMATES OF THE AVERAGE COST OF COMMON EQUITY TO ELECTRIC UTILITIES FOR THE YEAR ENDING JUNE 30, 1984

Commenter ¹	Sample size	Model used ²	Current dividend yield (percent)	Quarterly dividend adjustment (percent)	Adjusted dividend yield (percent)	Constant growth rate (percent)	Required rate of return (percent)	Flotation cost adjustment (percent)	Cost of common equity (percent)
NEP ³	93	6	10.85	.89	11.74	5.25	16.99	.66	17.65
PPL	97	4	10.55	.62	11.17	5.83	17.00	.44	17.44
EEI	NR	4	NR	NR	11.52	4.98	16.50	.74	17.24
SWEPSCO	108	4	11.13	.52	11.65	4.70	16.35	.84	17.19
NSP	90	8	10.83	.42	11.25	5.25	16.50	.40	16.90
AUS	93	7	NR	NR	11.60	5.10	16.70	.16	16.86
BE	89	2	10.80	.30	11.10	5.25	16.35	.45	16.80
Commission	100	2	10.74	.21	10.95	4.30	15.25	.06	15.31
FAB	100	3	10.80	.27	11.07	4.00	15.07	.06	15.13
PUCC	100	2	11.03	.21	11.24	3.88	15.12	NR	15.12
Cooperatives	91	3	10.90	.26	11.16	3.82	14.98	0	14.98

¹ See Appendix A for abbreviations.

² See Appendix B for listing of models.

³ Growth rate used here is average of proposed range of 5.00-5.50.

NR = Not reported.

For ten of the studies submitted, these differences are illustrated in Table 1, together with the Commission's findings for the base year. They are arranged in descending order based on their estimated costs of common equity. The Commission finds these particular studies most useful because they focused on the same time period for their analyses (the base year July 1983 to June 1984), did not impose stringent screens on their sample selection, and relied on constant growth DCF formulations.²⁴

The importance of the common time period is to permit comparisons of end results. The cost of capital is akin to an interest rate and, as such, rises and falls over time. To the extent that commenters evaluate this cost for different time periods, they are estimating different costs.

Similarly, when commenters impose different screening rules to meet "their"

criteria of the relevant industry average, they estimate different costs. While one commenter may think the sample should consist only of low risk companies, another may think high risk is the relevant group. The rule adopted by the Commission specifies the benchmark as an average cost across the industry reasonably applicable to the majority of companies. The Commission believes that this is best evaluated by a large broad-based sample of companies.

Finally, while variable growth models were proposed by two commenters,²⁵ most commenters relied on constant growth rate models because of the relative stability of utility returns. Commenters generally agreed that a reasonable estimate of the market required rate of return can be obtained with a constant growth model. However, since a variable growth rate model may

better reflect reality, the constant growth rates of commenters are essentially composites of variable growth rates.²⁶

3. Dividend Yield

As Table 1 shows, differences among the commenters as to the current dividend yield were relatively minor. Generally, they were due to differences in six factors:

- (1) the sample of companies,
- (2) the dividend rate,
- (3) the market price,
- (4) the use of monthly or quarterly dividend yields,
- (5) the measure of the average, and
- (6) whether the yields were weighted or unweighted. Except for the measure of the average, none of these factors appear to affect the results for the base year significantly.

In evaluating the dividend yield, the Commission relies on a sample of 100 utilities.²⁷ This sample represents essentially all predominantly electric utilities listed on the New York and American Stock Exchanges and included in Standard and Poor's Utility

²³ For a growth rate of 4 percent, equation (1) gives an adjustment factor of 1.0200 and equation (2) gives 1.0199. For a growth rate of 5 percent, the respective adjustment factors are 1.0250 and 1.0248.

²⁴ The studies of FPL, Southern, PSEG, Detroit Edison, SCE, Illinois Commission, and Public Systems are omitted because they estimate the market required rate of return for time periods different than the base year. GSA's study is omitted

because its sample of 59 companies with specified financial strength ratings is unrepresentative of the industry as a whole. The SPS study is not included because it relied on a non-constant growth model where much of the analysis to derive required rates of return is completed internally in a computer program. No average dividend yield or growth rate data was provided for the Commission to evaluate and compare with the other studies.

²⁵ See Initial Comments of Detroit Edison and SPS.

²⁶ See Section IV.A.3 below.

²⁷ See Section IV.A.2.a below.

Compustat II data base. This sample meets three criteria the Commission thinks important. First, it is broad-based and includes utilities that are predominately electric and, as such, is reasonably representative of the electric utility industry as a whole. Second, the relevant price and dividend data are available for all the companies in the sample. Third, this data is readily accessible from more than one source.

When used, either for the estimation of the base year cost or for quarterly updates, the companies are screened further to ensure that the appropriate data is available and that it can reasonably be used in a mechanical calculation of dividend yields. This screening is intended to reduce the probability that the industry average will be distorted by misleading data. The rule incorporates the following three screens:

- (i) The company's common stock through merger or other action, no longer is publicly traded, or
- (ii) The company has decreased or omitted a common dividend payment in the current or prior three quarters, or
- (iii) The Commission determines on a case by case basis that some other occurrence causes the dividend yield for that company to be substantially misleading and to bias the resulting quarterly average.

The first screen ensures data availability. If a company is no longer publicly traded, it will not have a current market price (and yield). The second screen is intended to eliminate companies whose data would probably be inappropriate and therefore misleading in a constant growth DCF model. The third screen gives the Commission the discretion to further eliminate problem companies when necessary. It is expected that this screen will operate only in extreme cases, for example, when a company exhibits a dividend yield of 100%. In any event, a list of excluded companies will be made available each quarter when the benchmark is updated.

The dividend rate used in the dividend yield calculation is the indicated annual rate, which is the most recent quarterly dividend declared times four. The market price used is the average of the monthly highs and lows. Almost all commenters used these data definitions because they meet the specifications of the variables in the DCF model.²⁸

While most commenters computed monthly dividend yields and then averaged them for the year, the Commission sees no advantage to computing three different yields in a quarter since the indicated dividend rate used is generally the same for each month. The Commission will rely on quarterly dividend yield calculations.

Since one of the objectives of the generic approach is to minimize the number of times that a company or its customers will plead special circumstances (i.e., "significantly different risk"), the Commission will use the median as the measure of the industry average.²⁹ The median yield is the statistical average yield where 50 percent of the utilities have lower yields and 50 percent have higher yields.³⁰ As such, it is uninfluenced by very high or low yield values for companies at the extremes. By contrast, the mean, which is probably the most commonly referred to measure of an average, can be affected by the existence of a few very high or very low yields (so-called outliers). This is because the mean is computed by summing the individual yield values and dividing by the number of observations. The use of the median is also called for where there is skewness in the distribution of the data being evaluated. The distribution of capital costs across utilities is skewed rather than symmetrical.³¹ If it were symmetrical, the mean and median would be equal. But, for data that is skewed, the median is the better measure of the average.

Finally, with regard to giving different weights to different companies, the Commission is unpersuaded that any benefits are achieved by this. In line with its reasoning on the use of the median, the Commission is seeking to obtain the cost of common equity to the average utility rather than the average cost to the industry.

Based on the above guidelines, the Commission finds that the current indicated dividend yield for the base year was 10.74 percent.³² Adjusting this

value for quarterly dividend payments, per the adjustment factor of 1.02 the adjusted dividend yield was 10.95 percent.³³

4. Growth Rate

As expected, the range of commenters' recommended growth rates was greater than any other component of the DCF model. Table 1 shows that most recommendations fell between 4.00 and 5.25 percent, a range of 125 basis points. The approaches used by commenters were also wide ranging, from simple extrapolations of past dividends to use of analysts' forecasts, to combinations of both.

Based on an evaluation of the dividend growth analyses submitted by commenters,³⁴ the Commission believes that the long run growth in dividends expected by investors during the base year was between 4 and 5 percent. The 4 percent growth rate was supported by FA Staff's fundamental analysis.³⁵ The 5 percent growth rate was supported by the 10-year historical growth in dividends, NEP's fundamental analysis, and analysts' forecasts. The inherent problems involved in estimating investors' growth expectations make it difficult to pinpoint a growth rate within this range. However, a fundamental analysis provides the Commission with a better understanding of underlying conditions in the industry and how dividends, in fact, grow. Such insights are useful for purposes of evaluating the weight to be given to either extrapolations of historical data or analysts' forecasts. In this proceeding, the Commission has concluded that because of the occurrence of significant changes in the industry over the past ten years, the use of historical data is less reliable than it otherwise might be. Similarly, the Commission believes that the use of analysts' short-term forecasts overstated investors' long-term growth expectations during the base year.

Nevertheless, the Commission recognizes how sensitive the result of a fundamental analysis is to the selected inputs. As a consequence, the Commission evaluated this approach from the standpoint of a variety of inputs which could be characterized as reasonable.³⁶ Based on this analysis, the

²⁸ See Section IV.A.2.b below.

²⁹ For an even number of observations, arranged from the lowest to the highest values, the median is calculated by averaging the middle two values. For example, after arranging the dividend yields for 100 companies from lowest to highest values, the median is calculated by averaging the yields of the 50th and 51st companies.

³⁰ See Section IV.A.2.b below.

³¹ Computer printouts with the data used to derive this yield have been placed in the public files.

³² See Section III.A.1 above.

³³ See Section IV.A.3 below.

³⁴ A fundamental analysis is distinguished by its evaluation of the underlying factors that influence growth from internal sources and external sources. It is generally represented by the formula $br + sv$.

³⁵ See Section IV.A.3.f below for the Commission's analysis.

³⁶ See Section IV.A.2 below.

Commission concludes that the range of reasonableness can be narrowed further to 4.0-4.5 percent. Reference to non-constant growth analyses also suggests a result within this range. Based on all our analyses of the evidence in this proceeding, the Commission finds that the expected growth rate in dividends during the base year was 4.3 percent.³⁷ Adding this growth rate to the adjusted dividend yield of 10.95 percent results in an estimated industry average required rate of return for the base year of 15.25 percent.

5. Corroborative Evidence

Most commenters responding to the Commission's request for evidence corroborating the results of their primary analysis used some kind of risk premium approach. They obtained risk premiums, on average, of about 4 to 5 percentage points over long-term government bonds or public utility bonds. The Commission has evaluated these approaches and finds problems with all of them.³⁸ The fact of the matter is that it is intrinsically difficult to develop a current risk premium.

In general, commenters either established risk premiums by comparing realized returns on stocks and bonds over an extended historical period or they estimated required rates of return on common stock by using a DCF model and computed risk premiums by subtracting the interest rate on long-term bonds from such estimates. The problem with the first approach is that there is evidence that current risk premiums are smaller than historical studies would suggest. The problem with the second approach is that the calculated risk premiums are dependent on their DCF estimates of the investors' required rate of return and the Commission has found such estimates to be overstated.³⁹

The most fundamental kind of corroboration for the 15.25 percent required rate of return found reasonable by the Commission comes from the 12.0-12.25 percent average interest rate on U.S. government bonds for the base year.⁴⁰ Since the common stock

investors' required rate of return is in the nature of a long-term interest rate, a basic reference point is the interest rate on the lowest risk long-term securities available. From this perspective and against the background of the evidence submitted in this proceeding, the 15.25 percent required rate of return for public utility common stock appears consistent with the 12.0-12.25 percent government bond rates. Moving up the risk scale, the 15.25 percent also seems consistent with the 13.5 percent interest rate on newly issued public utility bonds for the base year.⁴¹

The 15.25 percent estimate of the investors' required rate of return thus implies risk premiums of about 3 percentage points over long-term government bonds and 2 percentage points over public utility bonds. When consideration is given to the changed relationship between debt and equity securities and the inherent limitations of risk premium analyses themselves, the Commission finds these implied equity risk premiums to be reasonable.

Industry average price-book ratios also provide corroboration for the estimated required rate of return. Within the framework of a DCF analysis, the price-book ratio will be one if the expected rate of return on common equity is equal to the investors' required rate of return. If it is more than the investors' required rate of return, the price-book ratio will be above one. If it is less, the price-book ratio will be below one. The latter case is relevant to the current proceeding since the price-book ratio for the base year was about 92.5 percent. Assuming the 15.25 percent is correct, this suggests that investors during the base year expected the electric utility industry to earn less than 15.25 percent on common equity for the foreseeable future. Based on its evaluation of the evidence, the Commission believes that sustainable return expectations for the industry were below 15 percent during this time period. As a result, the price-book ratio check is consistent with the 15.25 percent required rate of return found reasonable by the Commission.

The Commission has also evaluated the earnings-price ratios and statistical

regression models relied on by commenters.⁴² It finds that they either corroborate or at least are not inconsistent with the Commission's estimate of the investors' required rate of return.

The Commission recognizes the weaknesses and imprecision associated with all the corroborative methods introduced in this proceeding. For many of these corroborative approaches, e.g., risk premium analyses and statistical regression models, the Commission's judgment is that it is unrealistic to expect a result that is anything akin to a precise match with a DCF result. If this occurs, it may be nothing more than happenstance. Given the nature of the task, i.e., estimating the investors' required rate of return on a common stock investment, the Commission believes that the primary value of the corroborative methods is that they can provide useful insights regarding the reasonableness of the result reached through a DCF analysis.

6. Flotation Costs

The next issue involved in deriving the average common equity cost is flotation costs. These are the costs incurred by utilities when they sell new shares of common stock.

Three types of flotation costs were alleged to exist. First are the issuance costs, the actual out-of-pocket expenses for underwriting, legal work, and publishing. Second are the so-called market pressure costs. These are the effects of stock price declines that allegedly occur when new common shares are added to the existing supply. The third type is referred to as market break costs. These are characterized as the effects of issuing new shares in a poor market.

None of the commenters disputed the existence of issuance expenses. Nor did they argue against companies being allowed to recover these expenses in their rates. The only substantive argument with regard to these costs was whether an adjustment for these expenses should be made only for new common equity expected to be issued annually or for all common equity. In contrast, there was substantial disagreement among commenters as to the existence of market pressure and market break costs.

The Commission finds that utilities should be recompensed only for issuance expenses.⁴³ With regard to

³⁷ As discussed in Section IV.A.3.f below, this growth rate determination is not based solely on data for the sample of companies used in the dividend yield determination.

³⁸ See Section IV.A.4.a below.

³⁹ See Section IV.A.4.a below.

⁴⁰ Moody's 1984 Municipal and Government Manual, p. a8, shows that the average of the 10 year constant maturity Treasury bonds was 12.0 percent for the twelve months ending June 30, 1984. The 12.25 percent is the average interest rate on 20-year U.S. government bonds for this same period. See Initial Comments of EEI at Appendix B, Table 1.

⁴¹ 13.5 percent is the average of the composite interest rates on newly issued public utility bonds for the twelve months ending June 1984, as reported in Moody's 1984 Public Utility Manual, p. a6. No new issues occurred in May 1984, so the 13.5 percent rate represents an average of the remaining 11 months. Since new issues rated Baa predominated during this period, the calculated average is likely upwardly biased as a reflection of an industry average interest rate for the base period. Interest rates on public utility bonds reported by commenters varied depending on bond rating, time period, and sample used.

⁴² See Sections IV.A.4.b and c below.

⁴³ This is consistent with current Commission policy. See *New England Power Co.*, 22 FERC ¶61,123 at 61,169 (1983) (Opinion No. 158).

whether an adjustment for these costs should apply to all common equity or only to new stock sales, the Commission agrees with the latter view. If utilities are allowed to recover their average annual issuance costs, they will be made whole. Average annual issuance costs are related only to new stock issues. While there are reasonable arguments for and against the existence of market pressure costs, the available empirical studies are inconclusive as to whether the average utility incurs a net market pressure cost when it issues new stock. With regard to market break, no empirical studies were submitted and the Commission finds its existence questionable.

In its Notice, the Commission suggested three alternative procedures for recovering these expenses: (1) incorporating an industry average estimate in the generic rate of return, (2) using a formula to calculate company-specific adjustments to allowed rates of return, and (3) making these costs an above-the-line item in the cost of service. Most commenters agreed with the Commission's expressed inclination toward an industry average adjustment.

The industry average adjustment approach is the best alternative and the method adopted by the Commission for several reasons. First, flotation costs (or simply issuance costs) have a relatively small quantitative impact. Second, the appropriate costs are forecasted values relating to future new stock issuances. Thus, the small quantitative adjustments are also subject to forecasting errors, lessening the confidence that can be placed in the values. Third, while an industry average adjustment may cause overrecovery of flotation costs by a particular company in some years and underrecovery in other years, this likely reflects differences in the timing of construction programs which would probably even out over the long run. Finally, with respect to cost of service treatment of flotation costs, the small magnitude of the costs together with the relative jurisdiction of the Commission over most companies' rates limits the cost effectiveness of this option.

Based on the evidence submitted in this proceeding and explained below,⁴⁴ the Commission believes that an adjustment of 6 basis points to the market required rate of return is appropriate. This results in an industry average market cost of common equity for the base year of 15.31 percent.

7. Jurisdictional Risk

The final issue in developing the base year cost estimate is the question of risk in jurisdictional vis-a-vis retail electric operations. The Commission finds the record inconclusive on this point. Lower regulatory risks were suggested by some commenters primarily by reference to the relatively high overall ratings given to the Commission by two investment firms, Merrill Lynch and Salomon Brothers, and by a review of specific Commission policies, such as construction work in progress and tax normalization. On the other hand, the Commission recognizes that regulatory risk may be offset by other types of risks and that it may be a type of risk that can be eliminated through diversification with a portfolio of other stocks.

Further, no commenter presented a reasoned basis for determining the appropriate adjustment. Since the benchmark determined in this proceeding serves only an advisory role, the Commission has decided not to make an adjustment to the industry average cost of common equity in this proceeding. Therefore, the Commission finds that the average cost of common equity for the jurisdictional operations of electric utilities during the year ending June 30, 1984 was 15.31 percent.

B. Quarterly Indexing Procedure

In its Notice, the Commission proposed that the average cost of common equity be indexed to public utility dividend yields and that the quarter-to-quarter changes in the benchmark rates be capped at 50 basis points. In making this proposal, the Commission stated its belief that it was reasonable to assume investors' expected growth rates would remain relatively constant between proceedings, especially since it had chosen to have annual rather than biennial generic proceedings. The Commission also noted the tradeoff between keeping the benchmark rates of return reflective of the actual cost of common equity and maintaining stability and predictability in allowed returns.

While some commenters had qualifications to various aspects of the Commission's proposal, they were generally favorable to the proposal as a whole. On review of the comments, the Commission adopts its proposal to index the cost of common equity to utility dividend yields with a cap on quarterly changes. Specifically, the Commission will keep the benchmark reflective of current capital costs by basing it on the median quarterly dividend yield for the most recent calendar quarter. Stability

and predictability will be maintained by use of a 50 basis point cap on the quarter-to-quarter changes in the benchmark. This limitation applies only to the three quarters after the initial benchmark is set in each annual proceeding and before the completion of the next proceeding. The initial rate established in each annual proceeding will not be subject to the cap.

The sum and substance of the base year cost determination is to establish the parameters of a formula for deriving benchmark rates of return. This formula is essentially the DCF model referred to above, adjusted for flotation costs:

$$k = a(y) + b$$

where k = average cost of common equity

$$Y = \frac{D_0}{P_0} = \text{current dividend yield; current dividend rate divided by current market price,}$$

$a = 1 + .5g$ or one plus one-half the growth rate; the first adjustment factor which adjusts the current dividend yield for quarterly dividend payments, and
 b = the expected dividend growth rate (g) plus adjustments for flotation costs and jurisdictional risks, where appropriate.

Based on the parameters estimated in this proceeding, the quarterly indexing procedure formula becomes:

$$k = 1.02y + 4.36$$

The quarterly dividend yield will be computed in the same manner as described above for the base year cost determination. The same sample of companies will be used. It will be computed as the indicated dividend yield divided by the average of the monthly high and low prices. The average will be measured as the unweighted median.

The procedural steps for establishing the first benchmark rate and the quarterly updates to the benchmark rate are explained in Section VI below.

C. Benchmark Rate of Return on Common Equity for July 1 through July 31, 1985

Based on application of the quarterly indexing procedure to data for the first calendar quarter of 1985 when the median dividend yield was 9.90 percent, the benchmark rate of return on common equity for the period July 1 through July 31, 1985 is 14.46 percent.⁴⁵

⁴⁴ The backup data for these calculations have been placed in the public files. If this rule had been established in January 1985, the quarterly indexing procedure would have set the benchmark for the period February 1 through April 30, 1985 at 14.68 percent.

⁴⁵ See Section IV.B below.

IV. Comment Analysis

A. Base Year Cost of Common Equity

1. DCF Model and Quarterly Dividends

Commenters were almost unanimous in recommending the DCF method as the primary method for estimating the cost of common equity.⁴⁶ Most commenters devoted their efforts to espousing particular DCF models rather than alternative approaches. The majority of commenters proposed constant growth DCF models.⁴⁷

The variations on constant growth DCF models proposed by commenters are presented in Appendix B. As shown, differences between the models revolve around how they deal with the issue of quarterly dividend payments. While two deal with the issue through quarterly DCF models,⁴⁸ the majority propose various adjustments to the dividend yield component of the annual model. The models can be further distinguished by whether they reflect increases in the dividend rate paid to investors over the first year (quarterly compounding of dividends), whether they reflect a reinvestment of quarterly dividends to derive annual returns, or whether they reflect both.

Only customers recommended the following so-called continuous compounding DCF model.⁴⁹ (See Model (1) of Appendix B).

$$\text{Model (1) } k = \frac{D_0}{P_0} + g$$

where k = market required rate of return
 D_0 = current (indicated) annual dividend rate
 P_0 = current market price
 g = dividend growth rate

According to this model, the investors' required rate of return is equal to the current dividend yield plus a growth rate. This model is based on the assumption that dividends are paid out

continuously and makes no adjustment to the dividend yield component for the fact that dividends are paid out quarterly rather than continuously.

In contrast, only utilities proposed that the Commission rely on the so-called discrete annual DCF model.⁵⁰ (See Model (4) of Appendix B.)

$$\text{Model (4) } k = \frac{D_1}{P_0} + g = \frac{D_0 (1+g)}{P_0} + g$$

where k , D_0 , P_0 , g are defined as above, and D_1 = indicated dividend rate one year from now.

This model is based on the assumption that dividends are paid out once a year. According to the assumptions of this model, the dividend rate used in the yield component should be the dividend rate of a year from now. This rate is generally estimated by multiplying the current dividend rate by the growth rate used in the model. Like Model (1) proposed by customers, no adjustment is

made for the fact that dividends are paid out quarterly rather than annually.

Two other models were proposed which would adjust the dividend yield to a value somewhere between that of the continuous and annual discrete models discussed above. (See Models (2) and (3) of Appendix B).⁵¹

$$\text{Model (2) } k = \frac{D_0 (1+.5g)}{P_0} + g$$

$$\text{Model (3) } k = \frac{D_0}{P_0} \frac{[(1+g)^{-25} + (1+g)^{-5} + (1+g)^{-75} + (1+g)]}{4} + g$$

The first of these models, (Model (2)), effectively obtains an estimate of the average amount of dividends received by investors during the first year by multiplying the current dividend rate by one plus one-half the growth rate. The resulting required rate of return estimate is the midpoint of the continuous and discrete models. Commenters that proposed this model presented two arguments. First, they stated that the dividend rate in the constant growth model is supposed to reflect the nominal amount of dividends to be paid (or received) in the upcoming year. Generally, companies increase their dividend rate one a year. Some companies can be expected to increase their dividend rate in the near future, some a year from now, and the rest in between. Based on this, from the perspective of the average company or the average investor, the next dividend increase is a half year away from now. Thus, the current dividend rate is increased by one-half the expected annual growth rate to obtain the average amount of dividends that investors expect to receive during the upcoming year. The second argument proffered for

Model (2) relates more clearly to quarterly dividend payments. PSEG analogizes the difference in the results of the continuous compounding and discrete annual DCF models to the difference between a compound and simple interest rate. The more compounding assumed, the lower the rate of return required to produce a given annual equivalent result. This commenter concluded that while continuous compounding would tend to understate the cost of equity, annual compounding would tend to overstate it. Since dividends are paid and compounded quarterly, the commenter proposed the midpoint between the two models.

Model (3) uses a little more complicated procedure that, in effect, estimates the annual dividend rates at the end of first, second, third and fourth quarters by use of quarterly compounding growth rates and then averages them for use in the dividend yield component. Similar to the arguments used to support Model (2), proponents of this model suggested that (1) it would reflect, on average, the dividends to be received over the year

⁴⁶ Only two commenters opposed the use of a DCF approach. One, Iowa-Illinois, proposed an alternative ratemaking method whereby a real rate of return (which includes no allowance for inflation) would be applied to common equity investment adjusted for experienced inflation. This proposal represents a radical departure from current ratemaking methods and, as such, the Commission finds it beyond the scope of this proceeding. The other commenter, APPA, questioned the conceptual validity of applying a DCF-derived return to an accounting rate base. This issue is addressed in Section IV.C.2 below.

⁴⁷ Detroit Edison and SPS proposed non-constant growth DCF models.

⁴⁸ Models (8) and (9) of Appendix B. All model numbers used in text are the same as those used in Appendix B.

⁴⁹ Initial Comments of GSA at 3 and Exhibit 1, Public Systems at 10, and WCG at 2.

⁵⁰ Initial Comments of EEI at 2-19, MSU at 2, PPL at 5, SCE at 16, and SWEPCO at 3.

⁵¹ These models were proposed by a variety of commenters. Model (2) was recommended in Initial

Comments of Boston Edison *et al.* at 11, PSEG at 3 and PUC at 2. Model (3) was recommended in Initial Comments of FA Staff at 2, Cooperatives at 94, and FPL at 7.

and (2) it increases the current dividend yield to reflect investors' opportunity to reinvest dividends on a less than continuous basis.

The other alternative constant growth DCF models presented by commenters incorporate, in different ways, adjustments that increase the expected return estimates to reflect returns from reinvestment of the quarterly dividend payments. (Models (5) through (9) of Appendix B).⁵² Proponents of these models generally argued that investors' required returns on common equity reflect the reinvestment of periodic quarterly dividend payments. One of these commenters stated that the purpose of the adjustment was to recognize the cost to the utility of paying dividends to stockholders on a quarterly rather than an annual basis.⁵³

Another commenter offered what was referred to as the "Refined DCF Model."⁵⁴ The purpose of this model seemed to be to portray the timing of dividend payments as accurately as possible. Thus, the model allowed users to incorporate the exact number of days before dividend payments occur. The commenter did not apply the model to actual data for the purpose of estimating the base year market required rate of return.

Two other commenters proposed non-constant growth DCF model formulations arguing that they better represented the real world.⁵⁵ Detroit Edison stated that where a firm's stock price is presently selling below book value and there is reason to expect recovery toward book value, the standard (constant growth) DCF model cannot be strictly employed. The standard model assumes that the market-to-book ratio remains constant. As a result, it ignores capital gains that may be expected to arise over the near term as market value moves toward book value. SPS proposed use of its "Life Cycle Growth DCF Model." This model diverges from the constant growth model by reflecting a declining rate of growth as the industry matures.

On review of the proposed models, the Commission believes the "best" model to rely on for purposes of this proceeding is Model (2). The Commission is most persuaded by the argument that the actual required rate of return is somewhere between the

estimates derived from the continuous compounding and discrete annual DCF Models (Models (1) and (4)).⁵⁶ Investors prefer, and are thus willing to accept a lower return for, quarterly dividend payments beginning this quarter than annual payments beginning a year from now because they can reinvest the quarterly dividend receipts to obtain higher returns. Similarly, investors require a higher return for quarterly dividend payments vis-a-vis continuous dividend payments because they can reinvest the dividends received under the latter schedule. This is not the same as incorporating reinvestment of dividends within the model. The important distinction is that since investors can reinvest the dividends received on a quarterly basis, they do not require it in the return from a particular stock.

None of the commenters made a complete showing, mathematical or

otherwise, that their adjustment to the dividend yield component of the DCF model properly adjusted for the implications of quarterly dividend payments. Only two of the proposals seem to arrive at reasonable approaches to the issue—Models (2) and (3). Both of these models attempt to estimate what the average investor will receive in dividends over the coming year. However, Model (3) seems to be biased slightly upward by assuming that the earliest receipt of dividends is three months away. Applying the model to a large group of companies, it essentially says that some companies will raise their dividend rate and pay out dividends three months from now, others will raise their dividend rate and pay out dividends six months from now, others nine months, and still others a year from now. If one modified the adjustment factor as follows:

$$\text{Equation (2) } a = \frac{[1 + (1+g).25 + (1+g).5 + (1+g).75 + (1+g)]}{5}$$

the logic would seem to be complete and the result would closely approximate the adjustment of model (2), the difference being due solely to assuming simple or compounded growth in dividends during the year. Under this circumstance, it seems reasonable to choose the latter model as it is the simpler of the two.

The Commission agrees with commenters that this model best reflects the average dividends paid by companies (or received by investors) during the first year. Since companies increase their annual dividend rates at different times during a year, an estimate of the average amount of dividends that will be paid to investors during the first year is obtained by multiplying the current dividend rate by one plus one-half the growth rate.

Further, as discussed below (Section IV.A.2.c), the "indicated dividend rate" dividend by an average current market price is adopted as the Commission's measure of the current dividend yield. The indicated dividend rate is the most recently declared quarterly dividend rate times four (to make it an annual rate). Because of this, when one aggregates across many companies, the indicated dividend rate provides an estimate of the average amount of

dividends received during the six months prior to the current time plus the average amount of dividends that will be received over the next six months. If this rate is multiplied by one plus the growth rate, the result is an estimate of the amount of dividends that will be received during the year beginning six months from the current time. Thus, by implication, the result of multiplying the current dividend rate by one plus one-half the growth rate is an estimate of the average amount of dividends that will be received during the year beginning now.

Models (5) through (9) assume reinvestment of dividends.⁵⁷ Since the required rate of return on common equity does not reflect reinvestment of dividends, the model used to estimate it should not reflect reinvestment of dividends. Specifically, the basic DCF formulation relates the future cash flows investors expect from a stock to the current market price of that stock. The growth investors anticipate is simply that related to future dividend payments from the company. The DCF model does not reflect any cash flows or growth in cash flows to investors from year to year arising from their reinvestment of

⁵²Initial Comments of NEP at 13 and Schedule No. 2, Southern at 28, AUS at 21, NSP at 19, and Illinois Commission at 6. Reply Comments of EEL at 11 and Attachment A.

⁵³Initial Comments of Southern at 24.

⁵⁴Initial Comments of PSCC at 10 and Attachment 1.

⁵⁵Initial Comments of Detroit Edison at 6 and SPS at 9.

⁵⁶This is consistent with and supported by past Commission opinions. See Minnesota Power and Light Company, 3 FERC ¶ 61,045 at 61,133 n. 9 (1976) (Opinion No. 12); Minnesota Power and Light Company, 4 FERC ¶ 61,116 at 61,265 (1978) (Opinion

No. 20); Public Service Co. of Indiana, Inc., 7 FERC ¶ 61,319 at 61,709 (1979) (Opinion No. 44); New England Power Co., 22 FERC ¶ 61,123 at 61,188 (1983) (Opinion No. 158).

⁵⁷See Appendix B.

previously received dividends. Since the model does not reflect such reinvestment on a year to year basis, there seems to be no justification for reflecting it in the dividend rate for the first year. Further, as stated above, since investors may reinvest on their own the dividends they receive quarterly, they do not require or expect a return on particular stocks that reflect this reinvestment. If the Commission allowed rates of return that reflected such reinvestment, investors would receive such returns twice: once through the quarterly dividends received from that company and once through their reinvestment of those dividends.

While the "refined DCF model" and the non-constant growth models are alleged to enable the user to better reflect the real world, the potential gains in precision do not offset the benefits of using the simple constant growth model.⁵⁸ Using this model, the varying assumptions and parameter estimates of commenters can be compared and evaluated item by item in a relatively clear cut manner. On the other hand, the benefits of precision supposedly offered by the other models may be illusory if the evaluation of the necessary parameters is more complicated. Of these three proposed alternatives, however, the Commission sees merit in use of non-constant growth models akin to that proposed by Detroit Edison as a check on the reasonableness of any constant growth rate. Similar to the manner in which the yield component of the constant growth model represents a simplification of the real world where dividends are paid out quarterly, the constant growth rate represents a simplification of variable growth. As such, the constant growth rate is a composite average of non-constant growth rates over the future.

2. Dividend Yield

In determining the average current dividend yield for use in the DCF model, a number of factors are important. The first concerns the selection of companies to use it to derive the average dividend yield. What criteria, if any, should be used to establish the sample? Second, what statistic (or statistics) should be used to represent the average, e.g., the mean, the median? And, should this statistic give equal weight to all companies or base the weight each company receives on size or some other parameter? Finally, what definitions should be used for the dividend and

price variables used in the computation of the yields?

a. *The Sample.* Most commenters, in developing their estimates of the average common equity cost, relied on a sample of utilities. Most commenters, however, did not specify a list of qualities they thought important in a sample, e.g., homogeneous risk. Instead they simply listed the selection criteria they used in deriving their samples, e.g., Moody's bond rating of BBB or better. They used a wide variety of criteria. The criteria ranged from the fairly innocuous one of being listed on the New York Stock Exchange to one that eliminated companies that had dividend yields in excess of 13.5 percent because they "confront peculiar and unrepresentative circumstances which significantly increase the industry's average dividend yield."⁵⁹ Most commenters, however, performed their analyses with roughly the same sample of between 90 and 100 companies.

The base set of companies potentially included in the samples of commenters was determined in large part by the sources of data they used. The two most commonly used sources were the Value Line Investment Survey and Standard and Poor's Utility Compustat II data base, both of which cover over 100 utilities. Some commenters also required sample companies to be covered by certain investment advisory services: Salomon Brothers, Merrill Lynch, and the Institutional Brokers Estimate System. Presumably for similar data accessibility reasons some commenters required companies to be listed on the New York Stock Exchange.

Many commenters argued that the sample should not include companies whose statistics could produce misleading DCF results. Common recommendations were screens that would eliminate companies that either omitted or reduced their dividend rate in the current quarter or recent past.⁶⁰ Both of these circumstances were alleged to create low or zero dividend yields that were unrepresentative of investor expectations and therefore were not appropriate in the context of a constant growth DCF model. Suggesting bias in the other direction, one commenter recommended deleting companies with dividend yields in excess of 13.5 percent

or which had experienced significant price declines over the past year because they may represent situations where a dividend omission or reduction is imminent and known.⁶¹ Rather than attempt to specify all the situations that would lead to misleading DCF results or otherwise distort the average, two commenters proposed using a criterion of 2 or 3 standard deviations from the mean to eliminate outliers.⁶²

Some screens suggested by commenters were directed specifically toward problems in measuring the growth rate component of the DCF model. One commenter dropped companies whose calculated growth rates were negative while another eliminated companies whose growth rates exceeded 50 percent.⁶³ Two commenters required that the estimated growth rate be less than the market required rate of return.⁶⁴ Another commenter required that the utility must not have had a dividend decrease or omission or paid one time special dividends during the 10 years prior to the base period since that is the longest time period used to calculate dividend growth rates.⁶⁵

Other commenters argued that the sample should be relatively homogeneous. One stated that similarity in risk is a requisite for the feasibility of a generic rate of return.⁶⁶ Some commenters screened out companies that had significant amounts of nonelectric or nonutility revenues.⁶⁷ Another commenter stated that companies should meet some minimum acceptable financial strength standard. In this regard, it should be noted that the rule allows companies with significantly different risk to ask for a different rate of return. Thus, some commenters included only companies that had bond ratings above a specified level or Value Line financial strength ratings above a specified level.⁶⁸

Other commenters criticized the use of screening criteria.⁶⁹ They argued that such criteria were essentially *ad hoc* and their use would lead to endless debate. They also argued that if the benchmark is intended to be an average, all companies should be included in the

⁵¹ Initial Comments of Public Systems at 9.

⁵² Initial Comments of Public Systems at 8 and MSU at 6.

⁵³ Initial Comments of FPL at 18 and EEI at 9.

⁵⁴ Initial Comments of FPL at 18 and NSP at 15.

⁵⁵ Initial Comments of NSP at 16.

⁵⁶ Initial Comments of GSA at 6.

⁵⁷ Initial Comments of PPL at 3 and AUS at 11.

⁵⁸ Initial Comments of PPL at 4, SCE at 9 and GSA at 6.

⁵⁹ Initial Comments of FA Staff at 15, EEI at 17, and FPL at 18.

⁵⁸ Initial Comments of Public Systems at 3. See Reply Comments of FA Staff at Exhibit No. FAE1 for a summary of the samples and selection criteria proposed by commenters.

⁶⁰ Initial Comments of Boston Edison *et al.* at 4, PPL at 3, NEP at 2, and Cooperatives at 59. One commenter used the criterion on dividends must not have been reduced or eliminated at any time during the ten years prior to June 30, 1984. [Initial Comments of NSP, attachment at 16.]

⁵⁸ Cf. Delmarva Power & Light Co., 25 FERC ¶ 61,022 at 61,122 (1983) (Opinion No. 189), *affirming* Initial Decision, 22 FERC ¶ 63,052 (1983) at 65,208 (rejection of non-constant growth DCF model).

sample. Further, they stated that differences can best be dealt with in individual rate cases.

In evaluating the sample selection, the Commission considers three factors important. First, the sample should give a reasonable representation of the electric utility industry as a whole. As such, it should be broad-based and include utilities that are predominately electric. Second, the data needed for the study should be available for all companies in the sample. For our purposes, this means that the companies should all be publicly traded and have the relevant price and dividend data. The prices are the monthly highs and lows. The dividend rate is the indicated dividend rate based on the latest ex-dividend date as of the end of each quarter. (See below) Third, for all companies in the sample, current information on these statistics should be easily accessible to interested parties through one or more sources. The latter two standards allow the Commission to use the same sample of companies to update the benchmark using the adopted quarterly indexing procedure.

The application of the three criteria results in a sample consisting essentially of those publicly traded utilities or combination companies that:

- (1) Are predominately electric,⁷⁰
- (2) have their stock traded on either the New York or American Stock Exchanges, and
- (3) are included in the Utility Compustat II data base. The Commission sees no reason to exclude companies that trade on the American Exchange since data availability for these companies is as good as for those companies listed on the New York Exchange. Application of these criteria produces a sample size of 100 companies.⁷¹ These companies are listed in Appendix C.

⁷⁰ Operationally, the Commission has selected all companies classified in the industry groupings "Electric Services" or "Electric and Other Services Combined" by Standard and Poor's Compustat Services, Inc. These industry groupings are supposed to conform as nearly as possible to the Bureau of Budget Standard Industry Classification (SIC) Codes. Electric Services (SIC Code 4911) is defined as establishments engaged in the generation, transmission and/or distribution of electric energy for sale. Electric and Other Services Combined (SIC Code 4931) is defined as establishments primarily engaged in providing electric services in combination with other services, with electric services as the major part, though less than 95% of revenues. (Standard and Poor's Compustat Services, Inc., Utility Compustat II User Manual (1985))

⁷¹ There are exceptions. One company that meets these criteria is deleted because it uses a nonstandard fiscal year. This causes its dividend yields to be out of time with the rest of the companies. This company is Southwestern Public Service Company. A second company, CP National,

The Commission will obtain the requisite data for its calculations from the Utility Compustat II computer data base, a source used by many commenters. However, the data for the sample companies are also available in the Standard and Poor's Monthly Stock Guide which has wide availability.

Further, for consistency, data for the same sample of companies will be used to calculate the dividend yield used to update the benchmark quarterly.

While the three criteria listed above will be used to choose the sample of companies, the calculation of quarterly dividends should not include companies whose data would lead to obvious errors in DCF cost estimates. During each quarter the Commission will exclude any company for which one of the following situations exists:

- (1) The company, through merger or other action, no longer has its common stock traded on the New York or American Stock Exchange,
- (2) The company has decreased or omitted a dividend payment in the current or prior three quarters, or
- (3) The Commission determines on a case by case basis that some other occurrence causes the dividend yield for a company to be substantially misleading and to bias the resulting quarterly benchmark rate.

The first of these screens is intended to ensure a sample for the quarterly indexing procedure when a merger or the like occurs. The second screen prevents the use of companies whose circumstances would understate the dividend yield and potentially bias the results. An example would be where a dividend is reduced or omitted by a company facing short-term cash flow problems. If the dividend rate decrease or omission is expected to be a one time or short-term phenomenon, the use of a current dividend rate of zero in the $D/P + g$ type model would clearly understate the utility's required rate of return. The simple constant growth DCF model is inappropriate and either the data would have to be adjusted or a different model would have to be used. Rather than deal with this problem, the Commission has chosen to delete these most obvious problem cases from the sample. Based on data for the recent past, the sample would be reduced by no more than a few companies due to this screen. And, the third screen is set up in case some unforeseen event occurs that causes one or more individual companies in the sample to distort the

is deleted because in spite of its being listed as a predominantly electric company, it had only 19 percent of its revenues in 1983 derived from electric sales.

industry average yield. This is expected to be a rare occurrence and, of course, in the latter circumstance, the Commission would indicate the change in sample in its notice of the updated benchmark.

The Commission has decided not to go beyond these criteria and reduce the sample further by eliminating companies, e.g., those with significant non-electric operations or that are not financially strong. No commenter presented evidence to the effect that non-electric operations significantly affect the results. Also, to choose a sample of companies that meet certain threshold tests of financial health would not provide an industry average cost estimate. The Commission concurs in theory with the commenters that argue that all companies should be included in the sample if the benchmark is intended to represent the average. Only where obvious error or bias would result will the Commission exclude companies. Finally, while the existence of a high dividend yield or significant prior decline may portend a short-term aberration, such as an expectation of a future dividend omission, it may also reflect high capital costs. In any event, the concern for such outliers should be mitigated by the Commission's use of the median as a measure of the average (see below).

b. *Measuring the Average.*

Commenters used different measures to determine the average dividend yield. The most common measure used was the unweighted mean. Some commenters, however, used weighted means, medians and adjusted means computed after eliminating outliers.

The unweighted mean gives equal weight to the dividend yields of each company in the sample. One commenter, MSU, recommended that use of the unweighted mean for dividend yields and growth rates mitigates the effects of firms whose size or extreme ratios might distort the estimate of the industry average.⁷²

EEL looked at the unweighted mean and the market value weighted mean. For the market value weighted mean, the yield of each company is weighted by its total market value, thus giving greater weight to the yields of the largest companies.⁷³ EEL explained that the weighted mean provides an estimate of the required return on the average dollar invested in a group of companies, while the unweighted mean estimates the required return of the average company. While EEL concluded it was reasonable to develop an industry

⁷² Initial Comments of MSU at 5-6.

⁷³ Initial Comments of EEL at 1-12 of Appendix B.

average on either basis, it recommended the unweighted mean because it was consistent with its proposed flotation cost study and indexing procedure.

The weighted mean was recommended by other commenters.⁷⁴ One stated that the weighted mean was the correct statistic to rely on when dealing with a sample of companies with dissimilar characteristics and which occupy different proportions of the whole. Another commenter stated that weighting companies by their market value allows one to avoid tampering with the universe of companies. It argued that by using market value weights, firms with extreme high or low yields would have significantly less emphasis placed on them because their share prices would be low.

A few commenters evaluated (unweighted) medians as well as means.⁷⁵ Cooperatives stated that these two measures were approximately equal for the sample they looked at; thus, they focused on only the mean. Boston Edison *et al.* and FA Staff used the average of the two measures in their recommendations.⁷⁶ FA Staff stated that more often than not the unweighted mean adequately describes the group. However, it stated that the median is less affected by extreme values of statistics. In Reply Comments, the WCG pointed to the Boston Edison *et al.* study as showing a mean yield of 11.5 percent and a median yield of 10.9 percent.⁷⁷ They stated that this indicated a pronounced positive skewness in the distribution of yields across utilities because of a few utilities with high yields. In such a situation, WCG argued, the median is the technically more accurate measure of central tendency.

FA Staff also used the unweighted mean calculated after excluding outliers, or extreme values. It excluded dividend yields that were more than three standard deviations from the unweighted mean dividend yield, arguing that a normal, or bell shaped, distribution has 99.7 percent of the observations within plus or minus three standard deviations of the mean. Any observation lying outside that range would "be considered atypical of the population."⁷⁸

In evaluating the appropriate measure for the average, the Commission notes that an important objective of the generic rate of return approach is to minimize adjudication of this issue in individual rate cases. It follows that the appropriate measure of the average should be a rate that is reasonable for the greatest number of companies. Using such a measure should minimize the number of times a utility or its customers will argue for a rate other than the benchmark because the utility is significantly more or less risky than the average.

In comparing the alternatives, the median appears to be the most logical one to use for this purpose. The Commission agrees with commenters that the record evidence suggests that the distribution of dividend yields is skewed⁷⁹ and agrees with WCG that, in this circumstance, the median is the better measure of the average company's cost. This means that, in general, the dividend yields (and presumably the costs of common equity) for a greater number of companies will be closer to the median than the mean. Of the alternatives proposed, the median is also the least affected by the existence of extreme values in the data. This means that the industry average will not be distorted by a few companies. It also means that in the quarterly updating there will be less chance that random errors in arithmetic will affect the determined benchmark rates.

The other measures are less desirable primarily because they do not have the above features. The mean (weighted or unweighted) can be influenced by a few companies with extreme values, either low or high. If these extreme values are valid parameters for estimating the cost of common equity to these companies, the companies or their customers can probably show a significant difference in risk and justify a rate of return different from the benchmark. The benchmark, however, is intended to apply to most companies and so should not be allowed to be affected by a few atypical companies.

It may be more reasonable to adopt a mean calculated after excluding outliers. However, if the distribution of dividend yields is skewed to the right (as discussed above), it is difficult to distinguish outliers from high yields. The statistical methods available to detect outliers are rather subjective with symmetric distributions. They would be more difficult to justify with skewed (or

asymmetrical) distributions. If the criterion for outliers is based on being so many standard deviations from the mean, as proposed, more companies will be deleted from the high end of the distribution than from the low end. Because of this, the standard deviation is not the best statistic to use to delete outliers when the distribution is not symmetric. It seems that the effect of using a standard deviation criterion for deleting outliers when the distribution is skewed is essentially to move the estimate of the mean closer to the median. This result can be achieved more easily by just using the median.

The Commission also sees problems with the use of weighted averages. EE explained the difference between weighted and unweighted averages. The latter estimates the cost to the average utility while the former estimates the cost per dollar invested. As suggested by commenters, the weighting would be based on a measure of the size and value of the utility relative to the industry as a whole, giving proportionately more weight to the larger companies. This conflicts with the objective of establishing a rate of return that is representative of most utilities. Further, the other suggested benefits from weighting, i.e., to place less emphasis on extreme values, is better handled by using the median (unweighted) and deleting companies with obvious data problems.

c. Dividend Rate and Market Price. The dividend yield component of the DCF model is generally defined as the dividend rate divided by the market price. This section reviews the comments and determines appropriate statistical definitions for these variables. Most commenters that identified the dividend rate they used cite the "indicated dividend rate" which is generally defined as four times the last declared quarterly rate. Similarly, most commenters computed the market prices for their yield estimates as the average of monthly high and low prices. There were some slight variations on these measures. One commenter used the latest dividends paid rather than declared dividends. A few commenters used closing market prices instead of, or together with, the high and low prices. However, commenters did not offer any strong reasons for the latter alternatives or evidence that suggested that significantly different empirical results would obtain from their use.

The dividend rate specified by the model the Commission has chosen to use is the current rate. This is approximated by the so-called "indicated dividend rate" used by most

⁷⁴ Initial Comments of Southern at 19 and Reply Comments of AUS at 19.

⁷⁵ Initial Comments of Cooperatives at 86, Boston Edison *et al.* at 5, and FA Staff at 17.

⁷⁶ FA Staff based its current dividend yield estimate on the average of the mean, median, and the mean adjusted to eliminate outliers.

⁷⁷ Reply Comments of WCG Appendix A at 31.

⁷⁸ Initial Comments of FA Staff at 18.

⁷⁹ Initial Comments of Boston Edison *et al.* at 5 and FA Staff at 17.

commenters. Since the "indicated dividend rate" is defined as the last declared quarterly rate times four, when aggregated across many companies it approximates the current rate at which companies are paying dividends.⁸⁰ Therefore, the Commission will use this rate in the dividend yield calculation for the base year determination and for the quarterly updates.

Since the objective is to determine the average cost of common equity during a quarter, the required market price statistic is the average price that prevailed during the quarter. The average of monthly high and low prices provides a reasonable estimate of this average price. Therefore, the Commission will adopt this method of estimating the market price for use in the dividend yield calculation.

The quarterly dividend yield (dividend rate divided by market price) could be calculated as an average of the three monthly yields. However, as the indicated dividend rate will generally be the same for each of the three months, this approach would generally provide the same result as the Commission's single quarterly yield calculation.

3. Growth Rate⁸¹

Commenters correctly identified the estimation of the appropriate growth

rate in dividends as the most difficult task facing the Commission when conducting a DCF analysis of the investors' required rate of return. Since the growth rate being sought is the one expected by investors, it is not observable and thus must be inferred from all available evidence.

This is the nub of the problem for the Commission. What is the best evidence to use? Commenters made their estimates based on widely divergent approaches, data sources, and time periods, each one claiming that its analysis resulted in the best proxy for investors' growth expectations during the base year. Eighteen commenters made specific recommendations regarding the expected industry average growth rate based on their own analyses. Most recommendations fell between 4.00 percent and 5.25 percent, a range of 125 basis points.

Among the many reasons why the growth estimates varied was the fact that different samples were used in commenters' analyses. In some cases, the sample of companies used was not reflective of the industry, but rather a segment of the industry. Since the Commission has previously determined that a broad-based sample is required to

obtain an estimate of the industry average cost of equity, it would not be appropriate to use the results of an analysis which relied on either a select group of companies or one which screened out such a large number of companies that the remaining sample cannot be characterized as representative of the industry.

Once the issue of sample size is resolved, there are essentially three ways of estimating the dividend growth rate expected by investors. One can rely on such historical growth series as earnings, dividends, or book value on the assumption that investors use these data over some particular period in formulating their dividend growth expectations. One can take account of the dividend or earnings growth forecasts made by professional investment analysts on the assumption that investors place as much or more reliance on this kind of information. Or one can obtain estimates of dividend growth indirectly by engaging in a fundamental analysis of how growth in dividends occurs. Of course, one can also rely on combinations of these three approaches. The varied results produced by commenters' analyses are shown in Table 2, categorized by the data source of approach relied on most heavily.

TABLE 2.—ESTIMATES OF THE EXPECTED DIVIDEND GROWTH RATE

Commenter	Basis for growth estimate				
	Historical data	Forecast data	Historical and forecast data	Fundamental analyses	Non-constant growth analyses
PPL	5.83				
SCE		5.64			
FPL		5.54			
NEP	5.50		5.00		
NSP	5.25				
Boston Edison et al.			5.25		
Southern			5.15		
AUS			5.08		
GSA		5.00			
PSEG	5.00				
EEL		4.98			
SEP			4.70		
Illinois Commission		4.41			
Detroit Edison					4.20
FA Staff				4.00	
PUC	3.88				
Cooperatives				3.82	
Public Systems	2.70				

a. *Historical Data.* The growth estimates based on historical data series ranged from Public Systems' 2.7 percent to PPL's 5.83 percent.⁸² To attempt to identify the historical growth rates relied on by investors, Public Systems

did a correlation analysis to quantify the relationship between dividend yields and each of the historical growth rates in earnings, dividends, and book value over a ten year period. This was done for a 69-company sample which excluded "financially distressed" firms. Based on its analysis, Public Systems concluded that the six-year book value growth rate and the one year earnings growth rate were, in combination, most strongly correlated with dividend

⁸⁰ See also discussion in Section IV A.1 above.

⁸¹ As indicated above, the Commission established a sample of 100 companies on which to base its estimate of the dividend yield component of the DCF model for the base year and for the quarterly indexing procedure. The median dividend yield for this sample is the statistical measure of industry average determined most appropriate given the purpose of the benchmark and the characteristics of the dividend yield data. This involves essentially a mechanical calculation upon which little disagreement is likely to arise.

In contrast, the growth rate determined in this proceeding is not based solely on data for a sample of companies in the industry. First, this component of the DCF model is much more speculative than the dividend yield component. Second, the Commission is unaware of any mechanical calculation procedure for computing individual company growth rates to which it is willing to ascribe at this time. Third, the Commission's review of the growth rate studies submitted in this proceeding suggest that, as long as the sets of companies used as a basis for the estimate are reasonably large and broad-based in their representation of the industry, the differences in results stem largely from factors other than the sample. Because of these considerations, the Commission sees no necessity for conforming the sample of companies used to derive the dividend yield with the sample of companies used for the growth rate. Nor does the Commission think it appropriate to conform the samples, at least at this time. The above considerations make it reasonable for the Commission not to require commenters to rely solely on data for a particular sample of companies in the development of their growth rate estimates. This is important where commenters rely on data sources or specifications that may not be available for all companies.

⁸² Although the analysis performed by Public Systems arrived at a 2.7 percent growth rate, the implied growth rate embodied in its 13.5 percent rate of return recommendation was 3.0 percent.

yields.⁸³ The six-year book value growth, however, was responsible for most of the combined correlation and when both growth rates were weighted by their regression coefficients an average percent was obtained.⁸⁴

Most commenters relying on historical data used growth in dividends over some past period. The 5.83 percent recommended by PPL was based on the five year historical dividend growth rate for 97 companies.⁸⁵ Detroit Edison used Value Line's compound growth rate in dividends of 4.86 percent for the ten years ending 1983.⁸⁶ The PUCU recommended 3.88 percent based on a ten-year historical growth rate in dividends, although no underlying data was provided supporting its calculation.⁸⁷

Some commenters relied on averages of historical data for making their growth rate recommendations. NSP calculated the 5 and 10 year dividend growth rates to June 30, 1984 at 5.56 percent and 4.94 percent, respectively, and recommended 5.25 percent—the average of these two figures.⁸⁸ NEP calculated the same growth rates through 1983 to be 5.73 percent and 5.19 percent, respectively. NEP used the average of 5.5 percent as the top end of its recommended range.⁸⁹ PSEG arrived at a 5 percent growth rate by taking an average of the five year dividend growth rate of 6 percent for Moody's 24 electric utility index and a "sustainable" growth rate of 4 percent, which was calculated as the product of the retention ratio and the return on common equity.⁹⁰

In Reply Comments, Cooperatives argued that the historical growth rates employed by most commenters overstated investors' long-term growth expectations.⁹¹ They noted that these commenters generally relied on historical growth in dividends and objected to the use of earnings or book value growth because of the industry's adverse circumstances over the last ten years. According to Cooperatives, however, these commenters did not satisfactorily explain why investors would use the variable with the highest

growth rate as the basis for their long-term growth expectations.

FA Staff argued against the use of historical growth rates in general:

We believe that historical growth rates should be used only if a compelling case can be made that the economic conditions and company fundamentals which influenced these historical growth rates will prevail in the future.⁹²

FA Staff noted that the industry average earned rate of return on common equity increased from 11.5 percent in 1979 to 14.9 percent in 1983, which in turn led to earnings and dividend growth rates above sustainable levels. In addition, inflation and interest rates are down from their highs, and the industry's capital requirements are on the decline. Based on these considerations, FA Staff contended that this rising trend in earned rates of return is not likely to recur in the future, thereby making it inappropriate to use short-term historical earnings and dividend growth rates as proxies for investors' long-term dividend growth rate expectations.⁹³

b. *Forecast Data.* Several commenters used analyst forecasts of dividends or earnings as the basis for their growth estimates, which ranged from 4.41 percent to 5.64 percent. The EEI recommended a 4.98 percent growth rate based on analyst forecasts of five year growth rates in earnings per share published by the Institutional Brokers Estimate System (IBES), which surveys numerous analysts across the country on a monthly basis.⁹⁴ EEI's estimate was based on the mean value of monthly forecasts over the year ending June 1984. SCE based its growth estimate of 5.64 percent on the dividend growth rates projected by the Value Line Investment Survey for 56 "financially healthy" companies.⁹⁵ FPL used the average of the projected five year growth in dividends published by Merrill Lynch, Salomon Brothers, First Boston Corporation, and Value Line as the basis for its 5.54 percent recommendation.⁹⁶ The GSA recommended a dividend growth rate of 5.0 percent based on the average forecasts published by Value Line, Merrill Lynch, Salomon Brothers, and Prudential Bache for 59 companies whose Value Line financial strength was B+ + or higher.⁹⁷ The Illinois

Commission recommended a 4.41 percent growth rate based on analyst earnings forecasts published by IBES.⁹⁸ In contrast to EEI, however, which used an average of monthly forecasts over the year ending June 1984, the Illinois Commission took its growth rates from an IBES publication dated September 20, 1984.

Three commenters objected to using analysts' forecasts. Cooperatives argued that there is ample evidence that analysts' 3-5 years forecasts are above the industry's long run sustainable growth rate.⁹⁹ They pointed out that the industry is rebounding from a period of economic recession, high construction expenditures, and rising costs of capital. According to Cooperatives, analysts are projecting long-run sustainable growth to be lower after the near term recovery is completed. They cited Merrill Lynch's 4 percent projected steady-state growth in earnings per share beyond five years and Paine Webber's sustainable growth rate forecast of 2.9 percent after 1987.¹⁰⁰ Public Systems also contended that these forecasts "are not an accurate estimate of investor expectations for the long term."¹⁰¹ Public Systems believes the short-term projections made by analysts reflect recent events and are changed frequently as conditions change.

In its Reply Comments, Public Systems argued further that some of the sources used by companies are neither widely available nor very reliable.¹⁰² WCG also challenged the reliability of analyst forecasts, but conceded that investors may give some credence to them.¹⁰³ In WCG's view, however, analyst forecasts are not the expectations of the market but merely one, frequently discounted, source of information influencing investors.¹⁰⁴ Moreover, WCG contended that even if analyst forecasts were the sole basis upon which investors developed their growth expectations, the consensus of such expectations are not the same as the expectations of marginal investors, which are what is required for the growth factor used in the DCF model. WCG believes that the marginal growth rate will generally be lower and, assuming that the consensus growth rate is a mean, it calculated that the marginal growth rate associated with the IBES

⁸³ Initial Comments of Public Systems at 34.

⁸⁴ The result came to 2.19 percent when Public System's 90 company sample was used.

⁸⁵ Initial Comments of PPL at 1, 8.

⁸⁶ Initial Comments of Detroit Edison at 17. Their primary recommendation was based on a non-constant growth DCF model. This 4.86 percent is used in their alternative, constant growth analysis.

⁸⁷ Initial Comments of PUCU at 1.

⁸⁸ Initial Comments of NSP at 21-22.

⁸⁹ Initial Comments of NEP at 13-16. The lower end of its range, 5.0 percent, was based on a fundamental analysis which is discussed below.

⁹⁰ Initial Comments of PSEG at 5-6.

⁹¹ Reply Comments of Cooperatives at 43.

⁹² Reply Comments of FA Staff at 10.

⁹³ See also Reply Comments of WCG at 19.

⁹⁴ Initial Comments of EEI at 27 and Appendix B, Table 8.

⁹⁵ Initial Comments of SCE at 18-19.

⁹⁶ Initial Comments of FPL at 9, 26.

⁹⁷ Initial Comments of GSA at 2 and Appendix I.

⁹⁸ Initial Comments of Illinois Commission at 8.

⁹⁹ Reply Comments of Cooperatives at 20.

¹⁰⁰ *Id.* at 22-23.

¹⁰¹ Initial Comments on Public Systems at 16.

¹⁰² Reply Comments of Public Systems at 11-15.

¹⁰³ Reply Comments of WCG at Appendix A, 4-5.

¹⁰⁴ *Id.* at 14.

data would be 165-300 basis points below the 4.98 percent mean.

c. *Historical and Forecast Data.* Some commenters chose to base their growth estimates on both historical and forecast data.¹⁰⁵ Boston Edison *et al.* took into account that the average of historical growth rates in earnings and dividends over five and ten year periods as well as analysts' projections have both approximated 5.5 percent. Using recent growth from retained earnings of about 5.0 percent, they concluded that 5.0-5.5 percent was a reasonable range for investors' growth expectations and recommended the midpoint of 5.25 percent.¹⁰⁶ AUS evaluated five year historical growth rates in earnings, dividends, and book value and seven different forecast growth rates published by Merrill Lynch and Value Line.¹⁰⁷ By computing a market-weighted average of the five year historical dividend growth rate published by Value Line and the Merrill Lynch forecasts of growth in dividends, earnings, and steady-state earnings, AUS arrived at a recommended growth rate of 5.08 percent. SWEPCO recommended a 4.70 percent growth rate based on a weighted average of a five year historical growth rate in earnings and dividends of 5.73 percent and a forecast growth rate in earnings and dividends of 4.01 percent.¹⁰⁸ It gave 60 percent weight to the forecast growth rate and 40 percent weight to the five year historical growth rate in dividends. Southern developed its growth rate estimate of 5.15 percent by calculating a weighted average of a five year historical growth rate in earnings, a sustainable growth rate based on the industry average retention ratio and the required rate of return, and analysts' forecasts published by IBES.¹⁰⁹

d. *Fundamental Analyses.* In developing its estimate of the dividend growth rate expected by investors, FA Staff rejected the use of earnings and dividend growth rates as a proxy for long term dividend growth. Its rationale was that changes in earned rates of return and dividend payout ratios can cause trends in earnings and dividends which are not sustainable over the long term. In its view, "book value growth

represents the most reasonable estimate of the long-run sustainable growth rate."¹¹⁰ As explained, the two components of book value growth are retained earnings growth and growth from sales of common stock. Growth from retained earnings, or internal growth, is a function of the expected return on common equity (r) and the expected retention ratio (b).¹¹¹ Growth from stock sales or external growth is a function of how much stock is expected to be sold (s) and at what price relative to book value (v).¹¹² The formula expression for the sum of internal and external growth is $g = br + sv$.

FA Staff computed the br component to be 4.15 percent by estimating the expected return on common equity at 14.3 percent and the expected retention ratio at 29 percent. It calculated the sv component to be -0.15 percent by estimating that the expected growth in common equity due to new stock sales was 1.85 percent per annum and the expected accretion factor was -8.11 percent. The accretion factor was based on an industry market to book ratio of 92.5 percent for the year ending June 30, 1984. With an internal growth rate of 4.15 percent and an external growth rate of -0.15 percent, FA Staff recommended a 4.0 percent dividend growth rate for inclusion in the standard constant growth DCF model. According to the FA Staff, "varying growth assumptions more than a few years hence have little effect on the current market cost of common equity." As a result, "A single constant growth rate 'g', which largely reflects near term data, should satisfactorily measure the investors' long-term growth rate."¹¹³ WCG endorsed the growth analysis of the FA Staff, although it argued for a lower rate of return primarily because of the alleged lower regulatory risk associated with the wholesale electric business.¹¹⁴

Cooperatives engaged in the same kind of fundamental br + sv analysis of expected growth in book value as did the FA Staff, but they relied on different, though similar, data and arrived at a growth rate recommendation of 3.82 percent.¹¹⁵ Although both calculated the

sv component to be -0.15 percent, it was somewhat fortuitous in that they used different numbers for the individual s and v variables. The end result differed because of the br component. Cooperatives calculated a weighted average br of 3.97 percent for its combined nuclear and nonnuclear groups based on b and r variables that were slightly lower than those used by the FA Staff.

As noted before, the lower end of NEP's recommended range, 5.0 percent, was also based on a fundamental analysis.¹¹⁶ However, the br component was based on the rates of return and retention ratios realized for the year ending June 1984, and the sv component was computed using the market to book ratio on June 30, 1984.

Most companies argued that the internal growth rate, br, estimated by FA Staff was understated. AUS pointed to the 15.4 percent actually earned for the year ending June 1984, as well as the 35 percent retention ratio.¹¹⁷ NSP and NEP noted how sensitive the br + sv analysis is to the retention ratio, b, in the equation. Boston Edison *et al.* stated that each one percentage point by which the dividend payout ratio is overstated leads to a 15 basis point understatement in the br component. Boston Edison *et al.* also contended that FA Staff may have understated the br component by relying on Value Line projections which were published in the last quarter of the base year, while the dividend yield was calculated for the year ending June 1984. According to them, Value Line's earnings and dividend projections were lower in that last quarter than they were in the three preceding quarters.¹¹⁸ AUS argued that it is more reasonable to look directly to earnings and dividend forecasts "than to attempt to circuitously identify isolated components of growth."¹¹⁹ A few commenters just asserted it was wrong to use the growth in book value as a proxy for investors' dividend growth expectations.¹²⁰

Most companies also took issue with the FA Staff's use of a negative sv, or accretion factor, within the context of the standard constant growth DCF model. Although based on an estimate that investors expect new stock issues over the near term to be sold at prices below book value, commenters

¹⁰⁵ PEPCO derived an estimate of 6.5-7.0 percent for 15 "superior quality" electric utilities by using five to seven year historical growth rates in dividends and five year dividend growth projections made by Value Line, Merrill Lynch and Salomon Brothers, but did not represent it as an industry-average estimate. See Initial Comments of PEPCO at 11-12.

¹⁰⁶ Initial Comments of Boston Edison *et al.* at 18.

¹⁰⁷ Initial Comments of AUS at 24-25.

¹⁰⁸ Initial Comments of SWEPCO at 4.

¹⁰⁹ Initial Comments of Southern at 5-6.

¹¹⁰ Initial Comments of FA Staff at 5.

¹¹¹ The retention ratio is equal to one minus the dividend payout ratio.

¹¹² The variable "v", called the accretion factor, is equal to one minus one divided by the ratio of market price to book value.

¹¹³ *Id.* at 3.

¹¹⁴ Initial Comments of WCG at 9.

¹¹⁵ Initial Comments of Cooperatives at 95.

¹¹⁶ Initial Comments of NEP at 16.

¹¹⁷ Reply Comments of AUS at 23; see also Reply Comments of Boston Edison *et al.* at 4-6, NEP at 9-11.

¹¹⁸ Reply Comments of Boston Edison *et al.* at 2.

¹¹⁹ Reply Comments of AUS at 23.

¹²⁰ See, e.g., Reply Comments of PEPCO at 5, AUS at 13.

contended that the implication of using that estimate in the constant growth model is that investors expect such dilution to continue, on average, forever. And this means that investors must expect that the industry will earn a rate of return on common equity below its cost of equity, on average, also forever. Such an assumption, according to these commenters, is unreasonable, particularly "in light of the recent improvement in market-to-book ratios and the improved levels of earnings * * *".¹²¹ Boston Edison *et al.* believes that "a more realistic assumption would be for investors to expect dilution only in the near-term future."¹²² Some commenters argued that "the inclusion of such a term perpetuates a utility's inability to sell new common stock at a market price equal to or above book value."¹²³

e. Non-constant Growth Analyses. Two commenters used non-constant growth DCF models. Only one, however, presented its variable growth rate estimates separately so as to allow the Commission to evaluate them.¹²⁴ Detroit Edison stated that its formulation of the DCF model "allows for the possibility that investors could expect a firm's dividend growth and other financial parameters to vary over time for some period before the constant growth rate applies."¹²⁵ Using Value Line data, Detroit Edison estimated a dividend growth rate of 4.67 percent through 1988 and 4.04 percent thereafter. The growth beyond 1988 was estimated based on the *br* or internal growth approach. The implied constant growth rate was calculated to be 4.20 percent.¹²⁶ In its Reply Comments, FA Staff urged the Commission to reject the use of a non-constant growth rate. In its view, it is not necessary to consider a non-constant growth rate and, furthermore, spot estimates four years in the future are subject to significant measurement error.¹²⁷

f. Discussion. Estimating the investors' expected growth in dividends is a necessary input in any DCF analysis. If the Commission were to fully heed the Reply Comments in this proceeding, however, there would be no way of implementing a DCF model. It is

probably fair to say that the Reply Comments challenged the validity of every expected growth rate recommended by commenters. Somewhat predictably, the Reply Comments focused on those parties whose positions were most adverse to their own. The use of historical growth rates, analysts' forecasts, and fundamental growth analyses were all criticized.

Notwithstanding the nature of the Reply Comments, the Commission believes that reasonable conclusions can be drawn from the submitted analyses regarding the expected growth rate. Moreover, the Commission explicitly rejects the notion that one kind of data or another need be ignored in determining the expected growth rate. While it ultimately may be appropriate to give little or no weight to some data, that judgment should be made only after considering all the evidence and why some data merit greater weight than other data. The Commission believes that it is through the process of comparing and evaluating the data that a reasoned decision can be made regarding the expected growth rate.

The primary issue with respect to the use of historical data for estimating the expected growth in dividends is whether the Commission should rely on such data at all. In the Commission's judgment, historical data does provide a useful frame of reference, regardless of how much weight is ultimately given to it. Its value is enhanced in this proceeding because it is industry average data, which can be expected to exhibit greater stability than individual company data and thus should provide a better basis for making estimates of the future. It is apparent, however, that the future may not be a reflection of the past and the more likely this is the case the less dependable historical data is. As a result, the Commission is compelled to make a judgment regarding the extent to which investors would rely on historical data in forming their growth expectations based on an assessment of the underlying economic forces contributing to past trends.

Another judgment that needs to be made is whether any particular historical series is a good proxy for investors' dividend growth expectations. The Commission believes that the answer depends on an evaluation of historical conditions in the light of both current and reasonably foreseeable circumstances. In other words, it is not appropriate to conclude for all time that either historical growth in dividends, earnings or book value is the most reliable indicator of investors' expected

growth in dividends. To the extent that historical data can be used for guidance in this proceeding, however, the record supports the use of historical dividend growth because economic conditions over the last ten years appear to have distorted the other two growth series to a greater extent.

The specific issue raised with respect to the use of five year dividend growth rates is why investors would formulate their long run expectations based on a relatively short period that incorporated significant changes within the industry. As was well documented, the electric utility industry has experienced several years of increasing rates of return and has recently been earning at an historically high level. Moreover, the bulk of the burdensome construction programs undertaken during the 1970's now appears to be over for most companies. In fact, near term forecasts show industry construction expenditures continuing to decline for the next several years.¹²⁸ We are in a changing environment and growth estimates based on recent historical data may not reflect investors' long run expectations.

The potential difficulty in relying on short-term growth rates was recognized by many commenters, and several tried to resolve the problem by including in their analysis a ten year growth rate in dividends.¹²⁹ These growth rates depending on the method of calculation and the industry sample used, tended to congregate around 5 percent. The five year historical growth rates in dividends were above 5.5 percent.

Given the increasing earned rates of return on common equity during the last five years, the Commission believes that the five year historical dividend growth rates are upwardly biased as a reflection of investors' long-term growth expectations. Since an average of 5 and 10 year historical growth rates gives heavy weight to the 5 year data, the Commission believes that such averages are also upwardly biased. If the Commission were constrained to choose only one historical growth rate in this proceeding, it would select the ten year historical growth rate in dividends. This period covered both good and bad times and thus might be expected to reasonably reflect long-term expectations of future conditions. It

¹²¹ Initial Comments of EEI at 19-20, SCE at 29, Boston Edison *et al.* at 22, Detroit Edison at 13.

¹²² Initial Comments of Boston Edison *et al.* at 25.

¹²³ Initial Comments of SCE at 29; See also Reply Comments of AUS at 19.

¹²⁴ SPS used a non-constant growth DCF model to estimate the investors' required rate of return, but the average implied growth rates were not separately stated.

¹²⁵ Initial Comments of Detroit Edison at 15.

¹²⁶ *Id.* at 20-21.

¹²⁷ Reply Comments of FA Staff at 11.

¹²⁸ Initial Comments of EEI, Appendix A, Table 5.

¹²⁹ Although PUCC stated that it used a ten year historical growth rate in dividends, its 3.88 percent estimate differed so much from the same calculation made by other commenters that it appears an error may have been made. At any event, the result cannot be relied on since the lack of backup data precludes checking the calculation.

should be clear, though, that there is no one best historical growth rate to use within the framework of a DCF model. Changing conditions with respect to both capital markets and the industry will cause various historical growth rates to be more or less reflective of investors' long term growth expectations.

Public Systems was the only commenter to rely primarily on historical growth in book value, and the Commission has several concerns with its correlation analysis. First, it is not reasonable to believe that investors only give consideration to historical data in forming their growth expectations. This seems particularly true with respect to the historical book value growth over the last ten years, which was greatly affected by large amounts of new stock being sold at significant discounts from book value. Second, correlation analysis does not by itself demonstrate a cause and effect relationship between the variables being tested. As Boston Edison *et al.* pointed out, one can get similarly high correlations between dividend yields and the significantly higher forecasted growth rates published by Salomon Brothers and Value Line.¹³⁰

Finally, a 2.7 percent dividend growth rate suggests an unrealistically low rate of return on common equity expected by investors. For example, using a sustainable growth analysis, the 2.7 percent growth rate implies a 9.0 percent expected rate of return on common equity assuming an industry average retention ratio of 30 percent.¹³¹ If other plausible retention ratios are used, the results are not sufficiently different to contradict the main point that a 2.7 percent dividend growth estimate is unreasonably low.

For those commenters that used analysts' forecasts, it was generally necessary to rely on short-term growth estimates, since such forecasts tend to be for only 3-5 years. The individual forecasts relied on by these commenters ranged from below 4 percent to above 6 percent. The forecasts were often averaged together, however, so that the end result forecast actually used was more likely to be in the range of 5.0-5.5 percent. The issue raised here is the extent to which the Commission should give weight to these analyst forecasts.

It seems reasonable to believe that investors would make use of all available data, historical, current, and forecast. As a result, the Commission

believes that investors do give consideration to analysts' forecasts and that it is thus appropriate to take them into account when estimating their dividend growth expectations. As far as which forecasts to rely on most heavily, the Commission believes that more is better than less. Therefore, the EEI estimate of 4.98 percent, which is based on the forecasts of many analysts, should provide a better indication of what investors expect than forecasts made by only one source or the average of just a few sources.

The Commission agrees with WCG that the growth factor in the DCF model should reflect the expectations of the marginal investors, but it believes that the evidence submitted on this point does not establish that the consensus growth rate is an unreasonable proxy for such expectations. The Commission, however, is sensitive to the argument made by Public Systems that analyst forecasts for 3-5 years may not capture investors' long run expectations.

In the Commission's judgment, the fundamental analysis undertaken by the FA Staff and others is a useful approach. The Commission agrees with WCG:

Earnings, dividends, book value, rate of return, and payout ratio are defined in terms of one another. Thus, earnings are return on equity times book value; dividends are earnings times payout ratio. Certain mathematical relationships follow these definitions. If return on equity and payout ratio are held constant, percentage growth in book value, earnings and dividends must be the same.¹³²

The Commission recognizes, however, that the use of this approach by itself cannot guarantee accurate results. What the approach does do, however, is to provide insights into the fundamental underpinnings of dividend growth and thus enables one to evaluate the reasonableness of historical or forecasted dividend data.

As discussed previously, FA Staff and Cooperatives conducted similar fundamental analyses, which yielded comparable results. The FA Staff's analysis, however, was more comprehensive in that it relied on more sources and used several different approaches. Moreover, as NEP pointed out, the Cooperatives relied on Value Line projections of rates of return on year-end common equity, which produced a downward bias in its result because such returns understate the rates of return on average common equity.¹³³ On balance, therefore, the

Commission is inclined to rely more heavily on FA Staff's analysis.

The fundamental analysis done by NEP was based on a *br* component that reflected the realized rate of return and dividend payout ratio for the base year. The Commission believes, however, that the recent industry trend in these two variables makes the base year results an inappropriate basis for estimating future growth expectations. The weight of the evidence suggests that investors would expect the realized rate of return to decline and the dividend payout ratio to increase. The 5 percent growth estimate produced by NEP's analysis, therefore, can be viewed as no more than the upper end of the range of reasonableness, the bottom end being the 4 percent growth estimate of FA Staff.

Although the FA Staff's analysis made an explicit effort to take into account near term and sustainable trends, the Commission is cognizant of the sensitivity of a fundamental analysis to the inputs selected. Under these circumstances, the Commission believes it is appropriate to evaluate the reasonableness of alternative inputs. For this purpose, it is instructive initially to review the *br* and *sv* components used by FA Staff and NEP:

$$g = br + sv$$

$$FA\ Staff: 4.0 = 4.15 - 0.15$$

$$NEP: 5.0 = 5.34 - 0.30$$

Although NEP incorporated a larger negative *sv* component in its analysis, its growth estimate was primarily a function of the much larger *br* component it used. As the Commission has already observed, there is good reason to believe that NEP's *br* component is significantly overstated because of its reliance of base year data which do not seem sustainable. On the other hand, FA Staff's 14.3 percent estimate of the expected rate of return on common equity in its *br* component appears reasonable and was well supported. Its use of 29 percent for the expected retention ratio (one minus the dividend payout ratio), however, appears more subject to an estimating error because it is more sensitive to both future earnings growth and managerial decisions regarding the declaration and payment of future dividends.

Moreover, the retention ratio can have such a substantial impact on the end result that it seems prudent to give consideration to more than one estimate. This is particularly true given the circumstances of a 65 percent average dividend payout ratio for the base year and FA Staff's estimate of a 71 percent sustainable payout ratio.

¹³⁰ Reply Comments of Boston Edison *et al.* at 13-15.

¹³¹ A 2.7% growth rate divided by an average retention ratio of 0.30 equals an average expected return of 9.0 percent, or $br = (.30) (9.0) = 2.7$.

¹³² Reply Comments of WCG at 18.

¹³³ Reply Comments of NEP at 11.

What needs to be taken into account is that investors might reasonably have expected that it would take a period of time before the industry reached the 71 percent level. If one assumes a 68 percent dividend payout ratio, the midpoint of the base year payout and the FA Staff's estimate, the *br* component increases from 4.15 percent to 4.58 percent.

With respect to the negative *sv* term, or accretion factor, the Commission has two concerns. There should be no controversy regarding the proposition that sales of common stock at prices different than book value affect growth in book value and ultimately earnings and dividend growth. The prospect of such sales should thus be taken into account. Nonetheless, the fact that the market price was so close to book value during the base year makes somewhat tenuous a projection that investors expected dilution over the near term, particularly against the background of improving profitability and capital market conditions.¹³⁴ The Commission is not contending, however, that one assume that the *sv* factor is zero at all times. It is at least conceivable that investors would expect the *sv* factor to be either positive or negative over the long-term if capital market and/or industry conditions were particularly buoyant or depressed. Rather, the Commission is suggesting that it is difficult to have a high degree of confidence in a relatively small adjustment under current circumstances. Such a quantification appears to profess greater accuracy in one's estimate than is warranted. In addition, assuming that investors did expect dilution over the near term, there is an issue of whether it is appropriate to incorporate such short-term expectations into the constant growth DCF model, if in fact they expected the market-book ratio to approximate one beyond the near term.

Based on the analysis up to this point, the Commission believes that the evidence supports a range for the expected growth rate of between 4 and 5 percent. The 5 percent growth rate is based on 10-year historical growth rates in dividends, NEP's fundamental analysis, and analysts' forecasts. The Commission, however, would give greater weight to analysts' forecasts because of the significant changes the industry experienced over the last ten years, which make the extrapolation of historical data less reliable than it

otherwise would be. With respect to analyst forecasts, however, the Commission's evaluation suggests that they should be viewed as essentially short-term expectations, which is what they in fact purport to be, and that such expectation overstated investors' long-term growth expectations during the base year. The 4 percent growth rate is based on FA Staff's fundamental analysis, which the Commission believes should be relied on most heavily. When consideration is given to alternative inputs to the FA Staff's analysis particularly with respect to the retention ratio and the *sv* component, the range of reasonableness can be narrowed further to 4.0-4.5 percent.

Reference to a non-constant growth analysis also suggests a growth rate estimate within the 4.0-4.5 percent range. When using a DCF approach in estimating investors' required rates of return, the norm has been to use the constant growth form of the DCF model. This model assumes, among other things, that dividends are expected to grow at a constant rate in perpetuity. It does not require, however, that dividends in reality grow at a constant rate from one year to the next, but only that one use a constant growth rate for purposes of implementation. This might entail, for instance, converting a variable growth rate to a mathematically equivalent average growth rate. A few commenters did engage in this type of analysis.

As discussed before, Detroit Edison calculated a 4.2 percent average growth rate based on a 4.63 percent rate through 1988 and 4.04 percent thereafter. The Cooperatives also included a non-constant growth analysis in their Reply Comments.¹³⁵ Among the possibilities they considered was that investors would expect near-term growth of 5 percent and growth thereafter of 4 percent. The weighted average of the growth rates for the first and second stages of growth was calculated to be 4.26 percent, assuming a first stage of three years, and 4.39 percent, assuming a first stage of five years.¹³⁶ Although this example did not incorporate specific industry data for dividends and prices, the Commission believes it is suggestive of the impact of a variable growth analysis using such data. Non-constant growth analyses are particularly useful for the purpose of demonstrating explicitly how misleading results can be derived if one makes use of short-term historical data or near-term projections which are not good proxies for

investors' long-term growth expectations. Under some circumstances, of course, either or both of these data sources may reasonably reflect investors' long-term growth expectations. In this proceeding, however, the evidence suggests that this is not the case.

Based on the preceding evaluation of commenters' growth analyses, the Commission finds that the expected growth in dividends is 4.3 percent.¹³⁷ Adding this growth rate to the adjusted dividend yield of 10.95 percent produces an estimated industry average required rate of return of 15.25 percent.

4. Corroborative Evidence

In the Notice, the Commission requested commenters to provide corroborative evidence of their estimated costs of common equity. Most commenters used some kind of risk premium approach. Other techniques used by commenters included price-book and earnings-price ratios, statistical regression models, and comparable earnings data.

In the judgment of the Commission, all the corroborative methods used in this proceeding have weaknesses that require that they be evaluated carefully. While some corroborative methods can provide guidance regarding the reasonableness of a required rate of return estimate, it does not seem realistic to always expect a very close correspondence with such an estimate, however, it is arrived at.

a. *Risk Premium Approaches.* A basic reference point for evaluating the reasonableness of the required rate of return estimate in this proceeding is the 12.0-12.25 percent average interest rate on U.S. government bonds and the 13.5 percent average interest rate on newly issued public utility bonds for the base year. Given such data, as well as the evidence submitted in this proceeding, the 15.25 percent required rate of return found by the Commission appears reasonable.

In general, commenters using a risk premium approach as an alternative method were either utilities or their representatives. Some of these analyses involved first estimating the investors' required rate of return with a DCF model and then subtracting the interest rate on some long-term debt instrument to obtain the relevant risk premium.¹³⁸

¹³⁷ It should be noted that the Commission gave little or no weight to the results of those analyses which did not use a broad-based industry sample, focus on the year ending June 30, 1984, or submit sufficient data explaining the sources used and the calculations made.

¹³⁸ Initial Comments of EEI at 29, SEP at 5, AUS at 36, NEP at 16.

¹³⁴ In fact, Boston Edison *et al.* pointed out that data from a Value Line report relied on by the FA Staff shows that the price-book ratio projected by Value Line was 1.02. See Reply Comments of Boston Edison *et al.* at 8.

¹³⁵ Reply Comments of Cooperatives at 24-38.

¹³⁶ *Id.* at 37.

PSEG used an earnings-price ratio rather than the DCF as a proxy for the investors' required rate of return.¹³⁹ Other commenters made use of various academic studies to obtain a risk premium that was then added to an interest rate on either U.S. government bonds or public utility bonds.¹⁴⁰ The risk premium analysis done by SCE used the S&P Electric Power Companies Index to calculate rates of return earned over a 25 year period on common stock investments, which were then compared to returns earned over this time frame by Moody's double-A utility bonds.¹⁴¹

Two commenters, Public Systems and WCG, objected to the use of risk premium analyses.¹⁴² Public Systems argued that all these studies make the incorrect assumption that common stock investments are more risky than bond investments. Although Public Systems conceded that common stockholders bear a greater risk of capital loss due to company-specific financial problems, it contended that bondholders bear the risk of interest rate changes to a far greater extent, particularly if the investment is one in a regulated public utility. Since a bondholder's payments remain fixed, the price of the bond will decline if interest rates rise. If interest rates fall, however, a bond's call provisions will limit the upside potential of the investment.

On the other hand, the rate of return that can be earned by a common stock investor is not fixed. If interest rates rise, a company can obtain a rate increase which incorporates a higher allowed rate of return. According to Public Systems, this "ability of utilities to request and receive higher returns on common equity when market conditions warrant them is a significant factor in the return requirement comparison between stocks and bonds."¹⁴³

As a result, Public Systems believes that there is a low interest rate risk component in a common stock investor's return requirement and that an equity risk premium should be based on short-term rather than long-term interest rates. Both Public Systems and WCG pointed out that the equity risk premium computed in the Ibbotson-Sinquefeld

study was based on Treasury bill returns and not bond returns. Moreover, Public Systems cited three different state regulatory commissions which have explicitly rejected the kind of risk premium approaches used in this proceeding for essentially the same reasons given by Public Systems.

WCG noted that the risk premiums computed by taking the difference between an estimated cost of equity and the interest rate on long-term debt for a base period were tautological, since the accuracy of the derived risk premium is a function of the accuracy of the estimated cost of equity.¹⁴⁴ WCG also made the argument that longer term debt securities have become much more risky recently. It noted that prior to 1979 the price of long- and medium-term debt securities was very stable over time because the Federal Reserve Board's policy was to control interest rates. In 1979, however, the Federal Reserve Board decided to change its policy and focus instead on controlling the money supply. As a result, interest rates and market prices of longer term debt securities became "unprecedentedly volatile," exceeding that of even utility common stocks.¹⁴⁵

Both Public Systems and WCG suggested that if one developed a required rate of return on common equity by properly using the Ibbotson-Sinquefeld study, it would come to around 12-13 percent. They arrived at this range by taking the 5.9 percent equity risk premium developed by Ibbotson-Sinquefeld, adjusting it to 3.8-4.1 percent for the lower risk of utility common stock by applying the industry average beta coefficient of 0.65-0.70, and then adding this adjusted risk premium to current interest rates on Treasury bills of 8-9 percent.

The Commission believes that Public Systems and WCG raised several worthwhile points. The obvious problem with any risk premium approach is that it is so difficult to determine what the risk premium actually is. Not only is it unknown, but it is likely to vary over time as well. Public Systems and WCG also called attention to other complicating factors. Whatever historical relationships existed between debt and equity securities prior to 1979 may not obtain now. Moreover, it is reasonable to believe that in recent years the risk of long-term bonds has increased relative to common stock, particularly public utility common stock. In the Commission's view, however, it is still an open question whether the risk

of long-term bonds can ever exceed the risk of common stock. The fact remains, though, that the use of an equity risk premium which is based on an extended historical period, as is the case with the Ibbotson-Sinquefeld study, cannot be accepted at face value.

It is still possible to derive some corroborative value from the Ibbotson-Sinquefeld study. Although Public Systems and WCG are correct in contending that that study's equity risk premium was based on Treasury bills, the same risk premium was associated with long-term government bonds since the realized returns for both securities were the same.¹⁴⁶ Furthermore, the Commission believes that to the extent a reliable risk premium can be developed at all, long-term government bonds rather than Treasury bills should be used. While it is true that Treasury bills are closer to being a risk-free security, it is not necessary to have such a security serve as the base rate. Moreover, interest rates on Treasury bills are more subject to short-term fluctuations and thus can experience much wider swings than Treasury bonds.¹⁴⁷ To add a fifty-year average equity risk premium to a spot Treasury bill rate is more likely to produce distorted indication of the cost of equity at any moment in time. Although a similar problem can occur when using Treasury bond interest rates, the Commission believes that it is more likely that changes in the costs of equity and long-term debt will be in the same direction. Finally, based on excerpts from the Ibbotson-Sinquefeld study included in Public System's Reply Comments, one can postulate that the equity risk premium over Treasury bonds was actually less than 5.9 percent over the 1926-1981 period.

We have reason to believe that investors demand a premium for taking the interest rate risk of long-term bonds. * * * Historically, investors have not actually received a positive maturity premium because unanticipated and rising inflation has caused long-term bonds to have low returns. We believe, however, that investors continue to demand, ex ante, a positive maturity premium now and in the future.¹⁴⁸

Adjusting the 5.9 percent risk premium for the lower risk of utility common stock to produce a 3.8-4.1 percent risk premium in the way done by Public Systems, and adding it to the 12.25

¹³⁹ Initial Comments of PSEG at 7.

¹⁴⁰ Initial Comments of Detroit Edison at 19, FPL at 20, PPL at 11. Among the studies cited was "Stocks, Bonds, Bills and Inflation: The Past and The Future" by Roger Ibbotson and Rex Sinquefeld (The Financial Analysts Research Foundation, 1982), which found an equity risk premium of 5.9 percentage points based on the difference between realized returns on common stock and Treasury bills over the 1926-1981 period.

¹⁴¹ Initial Comments of SCE at 22.

¹⁴² Reply Comments of Public Systems at 19, WCG at 11.

¹⁴³ Reply Comments of Public Systems at 22.

¹⁴⁴ Reply comments of WCG at 12.

¹⁴⁵ *Id.* at 12-13.

¹⁴⁶ Some commenters cited the 1984 update of the Ibbotson-Sinquefeld study, *supra*, which found an equity risk premium over long-term government bonds of 6.1 percent for the 1926-1983 period. See, e.g., Initial Comments of Detroit Edison at 19.

¹⁴⁷ On the other hand, the prices of Treasury bonds are more subject to interest rate fluctuations.

¹⁴⁸ Ibbotson and Sinquefeld, *supra*, p. 22.

percent average interest rate on Treasury bonds for the base year¹⁴⁹ results in an estimate of 16.1-16.4 for the investors' required rate of return. If investors in Treasury bonds were actually expecting to receive a maturity premium over the 1926-1981 period, it suggests that the required equity risk premium was less than 5.9 percent. If further consideration is given to the higher relative risk of long-term debt since 1979, an even smaller risk premium is indicated. There are thus good reasons to believe that the previously derived 16.1-16.4 percent is higher than the actual required rate of return for the base year.

The Commission also agrees with WCG that the accuracy of the risk premium analyses using a DCF is entirely dependent upon the accuracy of the required rate of return estimates. Since commenters generally used the same kind of DCF approach as in their primary analyses, and the Commission has already found the results of such analyses to be upwardly biased, it follows that the same finding must be made regarding the results of these alternative risk premium approaches.

When consideration is given to these upwardly biased DCF estimates, a few of the risk premium analyses do provide some corroboration as to the reasonableness of the 15.25 percent found by the Commission. For example, NEP's risk premium analysis derived DCF estimates of the required rate of return by estimating growth using both 10 year historical growth in dividends and current retained earnings growth (the product of the earned rate of return on common equity and the retention ratio). Risk premiums of 2.5 and 2.8 percent were then computed by subtracting the interest rate on public utility bonds.¹⁵⁰ When these risk premiums are then added to the 13.3 percent interest rate on public utility bonds for the base year, one obtains an estimate of the required rate of return of 15.8-16.2 percent.¹⁵¹ However, given that the Commission has already found that calculating growth in the way NEP did produced rate of return results at the high end of the range of reasonableness, its risk premium approach must also

overstate the investors' required rate of return. Aside from upwardly biased growth estimates, some commenters derived risk premiums which were high because their dividend yields were calculated in a way already rejected by the Commission.

b. *Price-Book and Earnings-Price Ratios.* The FA Staff initially confirmed the reasonableness of its estimate of the investors' required rate of return by noting that the price-book ratio was almost equal to one for the base year, which thus suggested that the earnings-price ratio should be just above its estimate. This proved to be the case, since the earnings-price ratio was calculated to be 15.59 percent, compared with the 15.07 percent required rate of return estimate derived by the FA Staff. In addition, the FA Staff used the relationship between the price-book ratio, the expected rate of return on common equity, and the investors' required rate of return to provide a further check of its 15.07 percent estimate. Since the price-book ratio was slightly below one for the base year, it implies, according to FA Staff, that the investors' required rate of return should be somewhat higher than the expected rate of return on common equity. This also proved to be the case, since its 15.07 percent estimate of the investors' required rate of return was above its 14.3 percent estimate of the expected rate of return on common equity. FA Staff's estimate was therefore "bracketed" by the earnings-price ratio and the expected return on common equity, as FA Staff hypothesized it should be.¹⁵²

Several objections were raised concerning FA Staff's corroborative methods. AUS argued that FA Staff's "unadjusted" earnings-price ratio was understated because the numerator of the ratio should reflect expected earnings.¹⁵³ The Commission believes AUS's criticism is misplaced. It seems apparent that the FA Staff's calculation of the earnings-price ratio did implicitly adjust the numerator of the ratio by incorporating an expected dividend payout ratio.¹⁵⁴ As a result, while one might legitimately question the nature of the adjustment, it does not appear appropriate to contend that no adjustment was made.¹⁵⁵

Some commenters argued that this earnings-price ratio check is valid only if one assumes the appropriateness of the constant growth DCF model. Since the Commission has essentially made such an assumption in this proceeding, it believes there is corroborative value to this test. Other commenters contended that this test amounts to nothing more than a manipulation of the same data used in FA Staff's and Cooperatives' DCF analyses.¹⁵⁶ Although the Commission tends to agree with this assessment as it relates to the Cooperatives' earnings valuation model, it does not entirely agree that it represents a fair characterization of FA Staff's earnings-price ratio test. While the FA Staff did use the same data in its DCF analysis, it was used only to confirm the internal growth rate it had estimated based on two other approaches.¹⁵⁷ Nonetheless, the Commission recognizes how sensitive FA Staff's computation is to changes in the payout ratio. For example, calculating the earnings-price ratio, as the FA Staff did, but using the previously determined dividend yield of 10.95 percent rather than FA Staff's 11.07 percent, one can get results ranging from 15.42 percent to 16.85 percent depending on which payout ratio from 65-71 percent is used. Using the midpoint of 68 percent, which the Commission believes is a reasonable estimate, the calculated earnings-price ratio is 16.10 percent. This figure is higher than the 15.25 percent found reasonable by the Commission, as it should be when the price-book ratio is below one.

The second test used by FA Staff also met with criticism by some commenters. According to this test, if the price-book ratio is less than one, which it was during the base year, it implies that the expected return on common equity is below the investors' required rate of return, which it was, using FA Staff's figures. Boston Edison *et al.*, however, contended that this test could be validated by any pair of returns which met this criterion. While true, it seems clear that most pairs of returns would not pass a test of reasonableness. For instance, the Commission found 15.25 percent to be a reasonable estimate of the investors' required rate of return during a period when the price-book ratio was below one. This suggests that investors expected a rate of return on

¹⁴⁹ Initial Comments of EEI at Appendix B, Table 1. Moody's 1984 Municipal and Government Manual, p. a.8, shows that the yield on 10 year constant maturity Treasury bonds was 12.0 percent for the base year.

¹⁵⁰ These results do not include a dividend yield adjustment for quarterly payments. With such an adjustment, the risk premiums would be somewhat higher.

¹⁵¹ 13.3 percent is the interest rate used by NEP. Moody's 1984 Public Utility Manual shows that the composite interest rate on newly issued public utility bonds was 13.5 percent for the base year.

¹⁵² Initial Comments of FA Staff at 34-35.

¹⁵³ Reply Comments of AUS at 28.

¹⁵⁴ Initial Comments of FA Staff at 34.

¹⁵⁵ The PUC also used an earnings-price ratio as a corroborative method, which allegedly produced 16.0 percent. However, the absence of backup data makes it impossible to determine what, if any, adjustment was made. Initial Comments of PUC at 5.

¹⁵⁶ See, e.g., Reply Comments of Boston Edison *et al.* at 26. Boston Edison *et al.* stated that its criticisms of FA Staff's earnings-price ratio test were also applicable to the "earnings valuation" model used by Cooperatives. See Initial Comments of Cooperatives at 96.

¹⁵⁷ Initial Comments of FA Staff at 25-26.

common equity below 15.25 percent. In its evaluation of the appropriate growth rate, the Commission has already suggested that it seems reasonable that investors would expect future returns on common equity to be below the historically high level reached during the base year. Given such expectations, this test thus corroborates the reasonableness of the 15.25 percent found by the Commission.

c. *Statistical Regression Models.* Two commenters, GSA and Boston Edison *et al.*, used a price-book model as a corroborative approach. GSA produced regression equations by using the price-book ratio as the dependent variable and expected rates of return on common equity and various risk indicators as independent variables. GSA claimed that its analysis indicated that a 14.3 percent expected return on end-of-year book equity was associated with an average price-book ratio of one for the base year.¹⁵⁸ Boston Edison *et al.* developed a similar regression model relating the price-book ratios of electric utilities to rates of return and risk factors.¹⁵⁹ It set the price-book ratio at 1.04, solved the regression equation for the required rate of return on common equity, and produced an estimate of 16.3 percent for the cost of common equity.

The statistical integrity of GSA's model was questioned by several commenters, including Boston Edison *et al.* The latter also contended that GSA provided insufficient data to allow verification of its results. While no commenter specifically addressed Boston Edison *et al.*'s corroborative approach, the Commission notes that it has criticized such a model in the past.¹⁶⁰ Nevertheless, accepting the results of these two models as given and making a few minor adjustments, the two approaches, taken together, tend to corroborate the reasonableness of the Commission's 15.25 percent finding. For example, GSA's 14.3 percent result was based on end of the year common equity. Adjusting it to a return on average common equity would produce a number higher than 14.3 percent. Similarly, Boston Edison *et al.*'s 16.3 percent included a flotation cost adjustment to allow the market price to sell at 104 percent of book value. Eliminating this adjustment for purposes of focusing only on the investors' required rate of return will produce a number below 16.3 percent. Therefore, regardless of the statistical or theoretical infirmities these models may

have, their adjusted results tend to converge on the 15.25 percent found reasonable by the Commission.

d. *Comparable Earnings Data.* NSP proposed the use of comparable earnings data for corroboration. According to NSP, "the comparable earnings-standard states that * * * a fair return is commensurate with returns earned on book equity investments in firms having comparable risks."¹⁶¹ NSP relied on the Value Line data base to select all manufacturing companies which had a price stability index comparable to electric utilities. A group of 32 companies met this criterion. Other risk measures were used to ensure that the 32 company group was comparable in risk to NSP's 90 company electric utility average. Having established risk comparability, NSP contended that "it follows that the average electric utility industry company should be earning a return on equity that is comparable to the 32 unregulated company group."¹⁶² The average return on common equity for this group over 5 and 10 year periods was about 17.5 percent.

The Commission has two concerns with NSP's corroborative approach. First, the relationship between risk and accounting rates of return is not clear. Companies and industries can earn book returns which are much higher or lower than their apparent risk would seem to dictate. The Commission concurs with WCG, "The return for any individual company or industry at any point in time may be biased by being in disequilibrium with the market, or representing oligopolistic or monopolistic impacts, or reflecting changes in consumer consumption patterns."¹⁶³ WCG contended that these biases can be eliminated only by looking at the total unregulated sector, but that by almost any measure these companies, on average, are riskier than electric utilities. Returns for the Fortune 500 were 10.9 percent in 1982 and 10.6 percent in 1983.¹⁶⁴ In the Commission's judgment, this demonstrates the problems associated with relating risk to accounting rates of return.

The second concern with NSP's corroborative approach is even more fundamental. The Commission has placed primary reliance on the market cost of capital in this proceeding. Accounting rates of return are not reliable measures of the current market cost of capital, since they do not reflect the current market prices that are

determined in competitive capital markets.

5. Flotation Costs

Flotation costs arise when new shares of common stock are sold. Three types of flotation costs have been alleged. First, issuance costs, including underwriter's fees and such out-of-pocket costs as legal and printing fees. Second, market pressure costs, the effects on market price of selling new issues of common stock. Third, market break costs, the effects of selling stock in a poor market.

All commenters agreed on the need for some flotation cost allowance.¹⁶⁵ They differed in the types and amounts of flotation costs to be recovered and in the method of recovery. From the perspective of an adjustment to the industry average market required rate of return, the range of recommendations was from FA Staff's addition of 0.06 percentage points to SPS's addition of 1.10 percentage points.¹⁶⁶

a. *Issuance Costs.* Issuance costs are composed of both underwriter's compensation and such out-of-pocket costs as legal and printing fees. These issuance costs reduce the proceeds received from a stock offering. Since a company earns a return on net proceeds only, it will not be able to earn the market required return on the new shareholder's investment if these issuance costs are not recovered in some fashion.

All commenters agreed on some form of issuance cost recovery. A number of commenters performed their own studies of the extent of underwriting and out-of-pocket costs.¹⁶⁷ Most of the

¹⁵⁸ One commenter, GSA, recognized the validity of issuance cost—but argued that recognizing them in a generic proceeding means that utilities will recover these costs even if the utility does not issue stock. Consequently, GSA recommended against adjustment for these costs in this proceeding. (Initial Comments at 11.)

Cooperatives argued in their initial comments against any flotation cost adjustment (Initial Comments at 31-42). In their reply comments, Cooperatives suggested that underwriter and out-of-pocket costs can be included as a cost of service item (Reply Comments at 48).

¹⁵⁹ Initial Comments of FA Staff at 35 and SPS at 17-18; the 1.10 figure represents the difference between SPS's required return estimate of 15.45 percent before flotation costs and 16.55 percent after.

¹⁶⁰ Initial Comments of AUS at 40-41 and Schedule 10, Boston Edison *et al.* at 29 and Appendix 14, EEI at 34, C-4, C-5 and Exhibits I-V, FA Staff at 35 and Attachment 17, GSA at 9 and Exhibit IV, NEP at 7, NSP at 26 and Attachment 5, SWPCO at 6-7 and Exhibit 4.

¹⁶¹ Initial Comments of GSA at 5.

¹⁶² Initial Comments of Boston Edison *et al.* at 32.

¹⁶³ New England Power Company, 8 FERC ¶ 61,054 (1979) (Opinion No. 49).

¹⁶⁴ Initial Comments of NSP at 12.

¹⁶⁵ *Id.* at 40.

¹⁶⁶ Reply Comments of WCG at 8-9.

¹⁶⁷ *Id.*

studies were for the year ended June 30, 1984. These studies estimated that, on average, issuance costs constituted between 3 percent and 3.66 percent of the offering price of new stock.

The Commission agrees that an adjustment should be made for issuance costs. There were no rebuttal comments criticizing any of the empirical studies as being biased or otherwise in error. Since the studies generally relied on data for large samples of companies for the same time period and arrived at roughly comparable cost estimates, the Commission considers the range of 3.0 to 3.66 percent on net proceeds reasonable and evaluates below how this should translate into an adjustment to the industry average market required rate of return.

b. *Market Pressure.* Issuing new shares of common stock and adding them to the existing supply available to investors is alleged to exert downward "market pressure" on the current stock price. Price declines resulting from this pressure are said to be costs to investors just like issuance expenses.

Utility commenters that addressed market pressure generally argued that it was a measurable cost.¹⁶⁸ A number of these commenters performed their own statistical studies to estimate this cost.¹⁶⁹ Generally, the studies compared the price change for a particular utility around the date of the issue to the price change for some index of utility stocks—e.g., the S&P 40 Public Utility Index or the Dow Jones Utility Index. Most studies examined new electric utility issues for the year ended June 30, 1984 using sample sizes ranging from 33 to 40 issues. These studies found average market pressure costs for utilities to range from 0.87 to 2.15 percent of the offering price.¹⁷⁰

A couple of utilities conceded that market pressure may be a very minor expense. SCE stated that "any adjustment would be minor, would be imprecisely calculated, and would be added to an already imprecise measure."¹⁷¹ MSU recommended that it be taken into account by rounding the flotation cost adjustment for issuance costs up to the nearest percent.¹⁷²

One utility customer, GSA, addressed market pressure in its comments.¹⁷³ It referred to a study which purportedly found that the issuance of new shares may or may not reduce share prices.

Two state commissions, FA Staff and one customer submitted comments recommending no adjustment for market pressure.¹⁷⁴ It was argued that market pressure costs will occur only when a new issue is unexpected by the market. It was stated that investors are generally aware of electric utility issues well in advance of issuance because utility financing and expansion plans are well known and an efficient stock market reflects these plans in current share prices.¹⁷⁵ Several companies replied to this argument.¹⁷⁶ Primarily, it was argued that even if company plans are known, uncertainties exist about details and timing of issues. When the announcement of the issue actually reaches the market, this gives rise to market pressure.

Concerning the empirical studies of market pressure, FA Staff evaluated the study submitted by EEI.¹⁷⁷ It noted that if two relatively small utilities whose "costs" were dramatically out of line with the costs of other utilities are dropped from the analysis, the resulting unweighted average cost becomes 0.97 percent of the issue price. FA Staff also pointed out that in the EEI study, 23 utilities experienced a decrease in price and 15 had an increase.

The Boston Edison *et al.* study showed a market pressure cost of about 0.875 percent. Nineteen of these utilities had negative price effects associated with new issues and 14 had positive price effects.¹⁷⁸ All of the studies submitted found that while the majority of issues experienced downward price effects, many experienced zero or positive price effects.

FA Staff and WCG examined whether the results of the market pressure studies were statistically different from a zero cost. Both examined the study submitted by EEI. FA Staff tested the cost as measured by the arithmetic average and found it not significantly different from zero.¹⁷⁹ WCG tested the

cost as measured by the median and found it not significantly different from zero.¹⁸⁰

The Commission generally concurs with FA Staff's argument concerning the efficiency of stock markets. Since information on utility financing and construction plans is generally accessible to interested parties, stock prices should reflect future stock issuances. While the studies in evidence show that the majority of new stock issues experienced some downward price effect, they also show that a large number of issues were associated with price increases. If market pressure costs do exist, one would not expect to see any price increases, except as statistical noise. Moreover, the statistical tests of market pressure costs found that the cost estimated by EEI was not statistically different from a zero cost. The Commission concludes that the evidence is inconclusive to support reflecting market pressure costs in the cost of common equity.

c. *Market Break.* Market break costs are the alleged effects of the reduced prices received by a utility when it sells stock during a period of short-term stock market decline. Unlike unregulated companies, since utilities have to maintain adequate capacity to meet the needs of their customers, they are sometimes forced to issue new stock in "bad" markets. Market break costs differ from market pressure costs. Market break costs result from selling shares during a period when stock prices have temporarily declined from their "normal" level, while market pressure results from placing an additional supply of stock on the market.

There were a small number of comments from companies directly concerning market break. Those commenters were inclined to recognize market break as a cost but did not propose methods of quantifying it.¹⁸¹

In reply comments, WCG stated that there is evidence that stock market prices follow a "random walk" pattern, in which case stock prices are just as likely to increase as they are to decrease, all other things being equal. Issuing stock in a period of downward price fluctuations is just as likely as issuing stock in a period of upward price fluctuations. Increasing the rate of return to allow recovery of market break costs will result in companies recovering such costs half of the time and making a

pressure costs would be accounted for by rounding flotation costs to 3 percent.

¹⁶⁸ Initial Comments of AUS at 41-42, Boston Edison *et al.* at 29, EEI at 6, FPL at 25, Iowa-Illinois at 7, MSU at 9, NEP at 7, NSP at 27, NU at 1, SWECO at 6-7, SPS at 18, and Southern at 7.

¹⁶⁹ Initial Comments of AUS at 41-42 and Schedule 10, Boston Edison *et al.* at 29 and Appendix 14, EEI at 34, C-4 and C-Exhibit VI, Iowa-Illinois at 7 and Exhibit C, NSP at 27 and Attachment 4, and SWECO at 6-7 and Exhibit 4.

¹⁷⁰ Initial Comments of Boston Edison *et al.* at 29 and NSP at 27.

¹⁷¹ Initial Comments of SCE at 17.

¹⁷² Initial Comments of MSU at 8. MSU suggested that if issuance costs total 2.4 percent, market

¹⁷³ Initial Comments of GSA at 11.

¹⁷⁴ Initial Comments of PUC at 7, Illinois Commission at 16 and FA Staff at 14, Reply Comments of WCG at 36-37.

¹⁷⁵ Initial Comments of FA Staff at 13-14, Illinois Commission at 15-16.

¹⁷⁶ Initial Comments of NSP at 49-50, Southern at 20, Reply Comments of AUS at 26 and Boston Edison *et al.* at 23.

¹⁷⁷ Reply Comments of FA Staff at 5.

¹⁷⁸ Initial Comments of Boston Edison *et al.* at Appendix 14.

¹⁷⁹ Reply Comments of FA Staff at 5.

¹⁸⁰ Reply Comments of WCG at 37.

¹⁸¹ Initial Comments of EEI at 33, NSP at 3, and SWECO at 18.

¹⁶⁸ Initial Comments of AUS at 41-42, Boston Edison *et al.* at 29, EEI at 6, FPL at 25, Iowa-Illinois at 7, MSU at 9, NEP at 7, NSP at 27, NU at 1, SWECO at 6-7, SPS at 18, and Southern at 7.

¹⁶⁹ Initial Comments of AUS at 41-42 and Schedule 10, Boston Edison *et al.* at 29 and Appendix 14, EEI at 34, C-4 and C-Exhibit VI, Iowa-Illinois at 7 and Exhibit C, NSP at 27 and Attachment 4, and SWECO at 6-7 and Exhibit 4.

¹⁷⁰ Initial Comments of Boston Edison *et al.* at 29 and NSP at 27.

¹⁷¹ Initial Comments of SCE at 17.

¹⁷² Initial Comments of MSU at 8. MSU suggested that if issuance costs total 2.4 percent, market

profit on stock issues the rest of the time.¹⁸²

Like market pressure, the Commission finds the record inconclusive on both the existence and magnitude of market break costs. There is no quantitative evidence in the record demonstrating the existence of market break and the theoretical argument of WCG of the equal likelihood of a market break cost and a market break "profit," is reasonable. Accordingly, the Commission makes no adjustment for market break costs.

d. *Issuance Cost Adjustment.* Three methods for recovering flotation costs were considered in the Notice: (1) Above the line as a regular cost of service item, (2) through company-specific formula adjustments to allowed rates of return, or (3) through an adjustment to the industry average benchmark rate of return.

Two companies, APS and PSCC, recommended recovery of flotation costs using a company-specific formula. APS did not provide a specific formula. PSCC suggested applying individual company circumstances to the formula used by FA Staff, or else recovering flotation costs as an above the line item. Several commenters favored direct recovery of flotation costs as an above the line cost of service item.¹⁸³ Actual issuance costs would be recovered either during the year of issue or amortized over a number of years.¹⁸⁴ The majority of commenters, however, favored recovering flotation costs through an adjustment to the industry average benchmark rate of return.

Two issues are raised concerning the recovery of flotation costs by these methods. The first is how to measure the adjustment and the second is whether the adjustment should apply to new issues of common stock only or to all common equity, including retained earnings.

Most investor-owned utility commenters favored applying the adjustment to all common equity.¹⁸⁵ It was argued that a utility should have its market price sufficiently above its book value so that net proceeds from new stock issues will be at least at book value. This will avoid dilution of existing equity when new stock sales are made below book value. Thus,

applying the adjustment to all equity would produce a premium of market price over book value to prevent dilution.¹⁸⁶ Other commenters argued that the flotation cost allowance should be for all equity because utilities have not recovered all past flotation costs.

The customer and commission staff commenters specifically addressing this issue—WCG, PUC and FA Staff—would apply the adjustment to new common stock issues only.¹⁸⁷ WCG argued that to allow flotation costs on all equity would result in excessive additions to book equity since the effective flotation cost allowance would exceed the costs actually incurred by the company. It also responded to the utility concern with recovery of past incurred flotation costs by arguing that the Commission has allowed recoupment of such costs in its past rate of return determinations.

The most often suggested techniques of adjusting the industry average benchmark rate of return for flotation costs were variations of a model for the cost of external common equity financing.¹⁸⁸ By this model, the cost of external equity financing is equal to the dividend yield, divided by one minus the percentage flotation cost, plus the growth rate of dividends.¹⁸⁹

$$k_e = \frac{D_0(a)}{P_0(1-f)} + g$$

k_e = Cost of external common stock equity

D_0 = Current dividend rate

P_0 = Current market price

a = Adjustment for quarterly dividend payments

f = Flotation costs as percent of gross proceeds

g = Dividend growth rate

In proposing the use of this model, Boston Edison *et al.* stated that this adjustment converts the dividend-price ratio to a dividend-net proceeds ratio and provides the return they allege must be earned for electric utilities to attract new equity capital and meet investor requirements.¹⁹⁰

The Illinois Commission recommended an alternative approach to estimating flotation costs.¹⁹¹ It

suggested that the average annual industry flotation costs be calculated by reference to actual costs over the most recent three year period. This averaging is intended to reflect companies in different stages of construction programs. By relating this average annual cost to total industry common equity, an estimate of the increment to the allowed rate of return to reflect average annual flotation costs would be produced. The Illinois Commission, however, did not apply their method to actual data.

In making its adjustment, AUS first computed the average flotation cost for each issue, *i.e.*, the average ratio of dollar flotation costs to offering price. It then computed the percentage increase in common equity due to new stock issuances for those utilities that issued new stock. These averages were computed for the year ending June 30, 1984. AUS recommended that the addition to the benchmark rate of return be computed by multiplying these two ratios.¹⁹²

FA Staff's method was similar to the method of AUS except that new stock issuances were related to total industry common equity rather than the common equity of only those companies that issued new common stock.¹⁹³ Its method is defined by the following formula:

$$k^* = \frac{fs}{(1+s)}$$

where:

k^* = flotation cost adjustment to required rate of return

f = industry average flotation cost as a percent of offering price

s = proportion of new equity expected to be issued annually to total common equity¹⁹⁴

The Commission concludes that for the reasons given in the Notice, an industry average flotation cost adjustment to the industry average required rate of return is the most reasonable method of dealing with this issue.

Upon review of this issue, the Commission is inclined to follow the approach of allowing an industry average adjustment to the benchmark rate of return. Aside from the small quantitative impact, there are at least two other reasons why the Commission has

¹⁸² Reply Comments of WCG at 39.

¹⁸³ Initial Comments of AUS at 44-46; Detroit Edison at 8, and SCE at 26; Reply Comments of Cooperatives at 45-46, CPL at 5 and WCG at 36.

¹⁸⁴ See, *e.g.*, Initial Comments of Detroit Edison at 8 and AUS at 45-46.

¹⁸⁵ NSP proposed splitting common equity between retained earnings and external common stock and applying the cost adjustment to the latter component only.

¹⁸⁶ See, *e.g.*, Initial Comments of Boston Edison *et al.* at 30.

¹⁸⁷ Initial Comments of PUC at 5 and FA Staff at 12-13; Reply Comments of WCG at 25-26 and Appendix A at 34-36.

¹⁸⁸ Initial Comments of Boston Edison *et al.* at 31. NEP at 8, EEI at 35, NSP at 25, PSEG at 10 and Southern at 26.

¹⁸⁹ See, *e.g.*, EEI Comments at 35.

¹⁹⁰ Initial Comments of Boston Edison *et al.* at 31.

¹⁹¹ Initial Comments of Illinois Commission at 15.

¹⁹² Initial Comments of AUS at 43.

¹⁹³ Initial Comments of FA Staff at 13 and 35.

¹⁹⁴ This is the expected growth rate of new common stock equity, estimated by FA Staff, and used in its calculation of the dividend growth rate. Initial Comments of FA Staff at 26-33.

come to this view. The determination of an appropriate flotation cost adjustment in an individual case typically involves a forecast of new stock financing and their associated issuance expenses for several years into the future. Therefore, the resolution of this issue depends upon an estimate of a future cost which may be higher or lower than the actual one. We are thus dealing not only with a very small cost, but one which is subject to forecasting errors as well.

Moreover, the difference between one company and another may simply reflect timing differences in their construction programs. One company may have recently completed a major portion of its planned construction expenditures, while another may have just begun a large building program. Over the long term, therefore, an industry average flotation cost adjustment may reasonably be expected to reflect the stock financing costs of most companies.¹⁹⁵

A company-specific formula approach would have more appeal if we were not dealing with an estimate of an adjustment of such a small magnitude. Similarly, recovering issuance expenses as part of the cost of service has some appeal. However, given its magnitude and the relative jurisdiction that the Commission has over most utilities, the cost of implementing this approach outweighs the benefits.

With regard to the question of whether an adjustment should be made for all common equity or only for new stock issues, the Commission has concluded previously that only flotation costs associated with new equity issues should be reflected in the cost of service.¹⁹⁶ The appropriate adjustment should reflect the average annual flotation costs incurred by a company and, in this way, it should achieve the same end result as would allowing flotation costs as a line item in the cost of service. To relate the flotation cost adjustment to all common equity, as proposed by most utility commenters, would produce an over-recovery of these costs since an adjustment of the magnitude they suggest would produce additional annual revenues equal to all past flotation costs.

With regard to the concern that the Commission has not allowed recovery of all flotation costs in the past, the Commission thinks otherwise. To the extent that such costs were requested in rates before the Commission, the Commission has evaluated their reasonableness in setting final rates. The Commission is unaware of any instances where it has concluded that issuance costs are not a legitimate cost of service.

Regarding the method of determining an adjustment to the required rate of return, the method used by FA Staff seems the most reasonable. FA Staff's method appropriately determines an adjustment that reflects, on average, the annualized amount of flotation costs to be incurred by utilities. Using this method, and combining the range of issuance cost percentages of 3 percent to 3.66 percent with FA Staff's estimate of the expected growth rate in new common stock equity of 1.85 percent,¹⁹⁷ the Commission concludes that FA Staff's 6 basis point adjustment to the market required rate of return is reasonable.

6. FERC-Jurisdictional Risks

Part 37 states that the Commission is interested in determining "an estimate of the average cost of common equity for the jurisdictional operations of public utilities" (emphasis added). In its Notice the Commission explicitly asked commenters to focus on this cost and explain why their estimate was reasonable. To the extent that commenters made adjustments to some industry average cost estimate, the Commission requested empirical support to the extent possible.

Commenters were in general agreement that companies are composites of many assets, each with their own risks.¹⁹⁸ FA Staff explained that utilities can be viewed as a composite of several business segments, one of which is the FERC-jurisdictional wholesale electric business. The utility's overall risk and cost of capital are weighted averages of the risks and costs of capital for each segment. The disagreement among commenters was not whether this view is valid on a theoretical basis, but whether one can apply the theory.

Two questions are of interest here. First, whether there is a difference in risk between the wholesale (FERC) operations of electric utilities and the retail operations. Second, if there is a difference, how should that risk difference be translated into an adjustment to the estimated industry average cost?

¹⁹⁷ See Section IV.A.5.a. above for the basis for the range of issuance cost estimates. The growth rate in common equity due to new stock issuances is from Initial Comments of FA Staff at 32 and 35. Two other commenters made estimates of the average new stock issuance growth rate which were not significantly different from FA Staff's, but provided inadequate information on which the Commission could evaluate their bases. FA Staff provided detailed supporting data for its estimate. See Initial Comments of NEP at 15 and Cooperatives at 95.

¹⁹⁸ See, e.g., Initial Comments of FA Staff at 20 and FPL at 19.

In general, commenters made little effort to deal with this issue. Investor-owned utilities, for the most part, asserted or assumed an equality between the retail and wholesale electric business risks or stated it is not practical to measure the difference.¹⁹⁹ While wholesale customer groups presented some evidence to support their claim that FERC-jurisdictional operations were less risky, they provided no substantive basis for their recommended adjustments to the cost of capital.

Only one utility group attempted to support the equality of risk between wholesale and retail operations.²⁰⁰ It noted that Salomon Brothers rated the Commission a C+ on a scale from A (highest) to E (lowest) where 8 states were ranked higher than, 12 equal to, and 28 below the Commission.²⁰¹

FA Staff concurred with the investor-owned utilities about the difficulties of estimating differences in capital costs between business segments.²⁰²

Although general conclusions may be drawn concerning the relative risk of a particular business segment vis-a-vis the overall utility, quantifying an adjustment to the overall cost of capital has proved to be elusive.

FA Staff noted that the Commission has recognized this difficulty.²⁰³ It recommended that until a "practical and proven method" of estimating these risk differences in allowed rates of return is developed, FERC-jurisdictional allowed rates should be based on utilities' overall market costs of common equity.

Two wholesale customer groups argued that FERC-jurisdictional electric operations are less risky than retail

¹⁹⁹ Initial Comments of AUS at 2-3, Boston Edison *et al.* at 1-3, FPL at 19, MSU at 7, NEP at 9, PPL at 5, SCE at 3, and SWPSC at 15.

²⁰⁰ Initial Comments of Boston Edison *et al.* at 2.

²⁰¹ According to Salomon Brothers, "[t]hese rankings are based largely upon our judgement of the return that the Commission is reasonably allowing the utility to earn." ("Electric Utility Regulation—Semiannual Review", February 26, 1985 p. 5).

²⁰² Initial Comments of FA Staff at 20-21.

²⁰³ In *Otter Tail Power Company*, 12 FERC ¶ 61,169 at 61,414 (1980) (Opinion No. 93), the Commission stated:

"[T]o attempt to unbundle the various functions of the electric business of a utility (e.g. production, transmission, etc.) and then apportion an equity return commensurate with the risk of that function would be almost an impossible task."²²

²² Even if in a particular case such evidence were presented, as a matter of policy we would choose not to consider it in order not to make the already complex rate of return analysis even more complex. The potential benefits of such a complex refinement do not offset the practical difficulties involved.

¹⁹⁵ 49 Fed. Reg. 29,967.

¹⁹⁶ See, e.g., *New England Power Co.*, 22 FERC ¶ 61,123 at 61,189 (1983) (Opinion No. 158).

operations.²⁰⁴ They claimed that wholesale ratemaking policies are more generous than those of other regulatory commissions. As examples of this relative generosity, they referred to the Commission's policies on fuel adjustment clauses, future test year, comprehensive tax normalization, construction work in progress, amortization of abandoned plant costs, and rate suspension. They also noted that Merrill Lynch recently increased the Commission from a rating of three plus to a rating of five on a scale of one to five, five representing the highest quality of regulation from the investor point of view. Public Systems stated that this rating change was due to the Commission's new CWIP policy and its consideration of ways to expedite cases.

Public Systems recommended that any industry average cost estimate must be adjusted downward by at least 250 basis points to reflect the lower wholesale regulatory risk. The WCG stated that setting the benchmark rate at the lower of 14.86 percent and the bottom end of the zone of reasonableness found in this record would be an adequate adjustment for this lower risk.

Several investor-owned utilities or groups responded to the customer groups' comments.²⁰⁵ They stated that neither Public Systems nor WCG gave any empirical support for their recommended adjustments. They also argued, in response, that: (1) Many states have policies similar to the Commission, (2) Merrill Lynch's high rating was also given to three states, (3) the Commission would be considered middle of the road based on Salomon Brothers' rating, and (4) the business risk (as opposed to the regulatory risks) of the generation and transmission side of the electric utility business is arguably higher than that of the distribution side.

The Commission finds that the evidence is inconclusive on the issue of wholesale regulatory risks. On the one hand, the Commission has considered commenters' evidence respecting the current investment ratings accorded the Commission by both Merrill Lynch and Salomon Brothers.²⁰⁶ The Commission

has also considered the findings regarding the probable risk and cost of capital reducing effects of at least two policy changes it made in the recent past.²⁰⁷ On the other hand, the Commission has considered other commenters' allegations that there may be greater business risks in generation and transmission activities (vis-a-vis distribution). The Commission is also aware that regulatory risks may be idiosyncratic and therefore could be diversified away by investors.

Further, while Public Systems and WCG have proposed specific adjustments, they do not support them with any analytical or quantitative evidence. Bearing in mind that this benchmark rate is intended to serve an advisory only function at this time and hoping that commenters in succeeding annual proceedings will provide more substantive analysis of this issue, the Commission finds no basis for making an adjustment to the industry average cost at this time.

Before leaving this issue the Commission wishes to reaffirm its policy in individual cases per Otter Tail and Minnesota Power and Light.²⁰⁸ The Commission continues to believe that company-specific adjudication of this issue is unlikely to produce benefits that offset the practical difficulties. In a generic proceeding, however, the Commission believes that the benefits may exceed the costs. Within the context of a generic proceeding, some empirical estimation of the risk differential is probably feasible. The Commission will return to this question in the next annual proceeding.

B. Quarterly Indexing Procedure

Three issues dominated the comments on the quarterly indexing procedure. The first is whether the indexing procedure should be based on utility dividend yields. The second issue, which assumes use of a dividend yield index, concerns the time period over which the dividend yield used in the index should be calculated—3, 6, or 12 months. The third issue concerns the need for a limit, or cap, on the quarter-to-quarter changes in the benchmark.

The Commission proposed that the average cost of common equity be indexed to public utility dividend yields from proceedings. It also proposed

that the quarter-to-quarter change in the benchmark rates of return be capped at 50 basis points. The Commission did not propose a specific time period over which to calculate the dividend yield for indexing.

The majority of commenters concurred with the Commission's proposal to update the benchmark rate between proceedings by using dividend yields.²⁰⁹ The PUCC explained that the yield is the larger and more volatile portion of the cost of common equity. Further, it noted that the data needed for updating the dividend yield is both uniformly and readily available. Cooperatives summarized four major reasons in favor of dividend yield based indexing.

First, the index is directly related to the industry; hence, changes in the index should represent changes in investors' expectations of electric utilities' future performance. Second, dividend yields are relatively easy to estimate empirically. Third, it is consistent with the use of the DCF model to estimate the industry's cost of equity capital. Fourth, for electric utilities, the dividend yield term * * * in the DCF model is typically 60 percent to 80 percent of the total cost of equity capital. The errors therefore associated with a dividend yield indexing mechanism should be less than other mechanisms. Indexing errors would be mitigated since the dividend yield term * * * would be reestimated each quarter and expected growth * * * appears to be fairly stable.²¹⁰

Some commenters, however, recommended the use of a DCF formula which would allow for changes in the growth rate component as well as the dividend yield component.²¹¹ It was argued that a procedure which only indexes the DCF yield component runs the risk of improperly matching the change in the equity cost rate with the generic rate of return granted electric utilities. They argued that yields change to reflect changing capital market conditions. The actual change in the cost rate for common equity may differ from the change in dividend yield. The change in dividend yield can be offset or even exceeded by a change in growth expectations. One commenter also stated that, over time, investors' growth expectations can be just as volatile, if not more volatile, than risk premiums over interest rates. According to these commenters, an indexing procedure

²⁰⁴ Initial Comments of Public Systems at 2-3 and WCG at 9-16 and Appendices A and B.

²⁰⁵ Reply Comments of EEI at 2, FPL at 1, NEP at 2, and SCE at 10.

²⁰⁶ See Merrill Lynch, "Utility Industry—Quarterly Regulatory Report", December 1984, p. 10; Salomon Brothers, Inc., "Electric Utility Regulation—Semiannual Review", February 28, 1985, p. 7.

²⁰⁷ Tax Normalization for Certain Items Reflecting Timing Differences in the Recognition of Expenses or Revenues for Ratemaking and Income Tax Purposes *et al.*, 46 Fed. Reg. 26,613 (1981) (Order No. 144); Construction Work in Progress for Public Utilities, 48 FR 24,323 (1983) (Order No. 298).

²⁰⁸ Otter Tail Power Company, 12 FERC ¶ 61,169 (1980); Minnesota Power and Light Company, 12 FERC ¶ 61,264 (1980).

²⁰⁹ Initial Comments of Cooperatives at 43, Boston Edison *et al.* at 42, PUCC at 7, Detroit Edison at 22, EEI at 36, FA Staff at 36, GSA at 13, MSU at 8, NEP at 22, NSP at 33, PPL at 14, PSEG at 10, SCE at 31, and SWEPSCO at 7.

²¹⁰ Initial Comments of Cooperatives at 44.

²¹¹ Initial Comments of AUS at 46, FPL at 27, Illinois Commission at 2, and Southern at 11.

based solely on dividend yields runs the risk of either overstating or understating the actual change in investors' required rates of return.

There was some variety in the specifics of the dividend yield calculations of the indexing proposals of commenters. Some commenters recommended using a 12-month trailing dividend yield.²¹² Others proposed the use of a six-month trailing dividend yield.²¹³ Still others proposed using a three-month average dividend yield.²¹⁴

FA Staff and others stated that using a 12-month trailing dividend yield will stabilize quarter-to-quarter variations and minimize the need for the proposed 50 basis points "cap." They also claimed that the 12-month yield was consistent with its calculation of the rate of return for the year ending June 30, 1984.

FPL, on the other hand, argued that a 12-month trailing average dividend yield would render the indexing process questionable. They asserted that the cost of equity should be calculated on the basis of the most currently available data. Otherwise, indexing will do little to accomplish the objectives of providing cost-based rates.

Boston Edison *et al.* and others stated that the six-month trailing average dividend yield shows movements in the index generally between those of the quarterly and 12-month average dividend yield indexes. They argued that their proposal strikes a reasonable balance between keeping rates stable and recognizing current costs in the financial markets. GSA argued that averages based on more lengthy periods would lessen the comparability of allowed rates to the rate effective period, while prospective rates calculated from one-quarter average dividend yields would encourage filing date game-playing by utilities.

EEL and NEP proposed a quarterly indexing mechanism that would update the benchmark rate of return on common equity at the beginning of each quarter with the average dividend yield for the preceding quarter. EEL argued that use of a quarterly average dividend yield was appropriate given that the purposes of the quarterly indexing mechanism are to update the benchmark rates to the time period to which they will apply and to keep the benchmark current. According to EEL, 12-month average dividend yields do not give sufficient weight to the most current capital costs while yields of shorter

duration than three-months would expose the benchmark to excessive volatility.

The majority of commenters that addressed the Commission's proposal to limit quarter-to-quarter changes in the benchmark rate of return expressed approval.²¹⁵ They argued generally that while the quarterly indexing mechanism would provide for a closer tracking of the benchmark rate of return with the actual cost of common equity between annual proceedings, the 50 basis points cap on quarterly changes in the indexed rate would protect investors and ratepayers from the vagaries of severe price adjustments that could result from extreme capital cost volatility.

Some commenters argued against the 50 basis points cap.²¹⁶ These commenters argued that the cap prevents the benchmark from reflecting current capital costs. One argued that if the intent of quarterly indexing is to reflect current market conditions and these conditions are changing rapidly, such changes should be reflected in the benchmark. Another stated it was desirable to capture the volatility of actual cost of common equity rates.

While not opposing the cap, FA Staff and PPL stated that using their recommended 12-month trailing dividend yield would minimize the need for the cap.²¹⁷ Cooperatives and PSEG suggested that the use of the cap be limited to serving as a triggering mechanism for a new proceeding.²¹⁸

The Commission believes that quarterly indexing based on dividend yields is the most appropriate method to use between the annual proceedings. It is consistent with the Commission's decision to place primary reliance on the DCF method of estimating the cost of common equity. Further, changes in investors' growth expectations over relatively short periods of time (in this case, the year between each proceeding) cannot be reasonably distinguished.²¹⁹ The Commission also agrees with commenters that stated that the dividend yield index is directly related to the industry and that it represents the larger and more volatile portion of the cost of common equity. Further, the necessary data for updating is uniformly and readily available for all companies.

The Commission rejects the proposals to recalculate the benchmark rate of return on common equity every quarter. At this time, the Commission does not have sufficient confidence in any one mechanical method for estimating growth rates.

The Commission recognized, in its Notice, the tradeoff between determining and allowing rates of return that approximated actual cost rates and maintaining stability and predictability in the allowed rates. In the comments to this proceeding this tradeoff has been exemplified in the proposals for measuring dividend yields on 12-, 6-, or 3-month average bases and in the debate over the desirability of limits on the quarter-to-quarter changes in the benchmark.

To keep the benchmark current, the use of a three month average dividend yield is most desirable. This will best produce rates of return approximating actual capital costs during the period of applicability. The competitive efficiency of capital markets assures the reasonableness of using average yields for a three-month period to estimate the cost of common equity. On the other hand, stability and predictability in the benchmark can be maintained with a limit on the quarterly changes. The use of the cap will limit the benefits to utilities from game playing in the timing of rate filings.²²⁰

The Commission rejects the use of 6- or 12-month dividend yield indexes. The use of these dividend yields appears to represent alternative compromises in the above-described tradeoff. As such they are not unreasonable. However, the Commission believes that use of the most current dividend yield together with a "cap" provides the best of both worlds. It maintains a distinction in the two objectives: currency and stability. Further, it permits the Commission to keep track of when the benchmark may be diverging from the cost on which it is based.

C. Other Issues

1. Cooperatives' Nuclear Risk Categories

Cooperatives recommended that the Commission establish different

²²⁰ The cap may be supported on grounds other than maintaining stability and predictability in allowed rates of return. While no empirical evidence has been presented to prove the point, the Commission still thinks it reasonable that the greater the change in the dividend yield, the greater the likelihood that the growth rate is also changing, and in the opposite direction. (49 FR 29967, 29968.) By this reasoning, the cap serves the purpose of adjusting the results from a mechanical application of the quarterly indexing to produce more accurate estimates of the cost of common equity.

²¹² Initial Comments of FA Staff at 36, NSP at 33, and SWPCO at 7.

²¹³ Initial Comments of Boston Edison *et al.* at 22, GSA at 13, Detroit Edison at 23 and SCE at 31.

²¹⁴ Initial Comments of EEL at 18 and NEP at 22.

²¹⁵ Initial Comments of Boston Edison *et al.* at 43, PUC at 8, EEL at 37, MSU at 9, NEP at 9, NSP at 34, SWPCO at 8, and Southern at 13.

²¹⁶ Initial Comments of AUS at 49, CSA at 14, Illinois Commission at 2, and SCE at 30.

²¹⁷ Initial Comments of FA Staff at 36 and PPL at 14.

²¹⁸ Initial Comments of Cooperatives at 108 and PSEG at 11.

²¹⁹ 49 FR 29967, 29968.

benchmark rates of return for those utilities without significant nuclear exposure and those with significant nuclear exposure. They argued that a single benchmark rate would be an overestimate of the cost to utilities without nuclear construction and an underestimate of the cost to utilities with significant nuclear construction.

The Commission makes no judgment, at this time, as to the empirical validity of the alleged bifurcation of the industry. If the situation that Cooperatives alleged represents more than a short term phenomenon, that should become apparent through the Commission's experience in individual rate cases as well as future generic proceedings. The rates of return determined in the first two annual proceedings are advisory only. The Commission may, however, review this issue in a future generic proceeding.

2. APPA's Case Against the DCF Method

APPA's comments focused on why it believes the Commission should not place primary reliance on the DCF method for determining allowed rates of return. APPA primarily objected to determining revenue requirements by applying a DCF measure of the cost of capital to a book value rate base. It argued that a rate of return measured in book rate units is conceptually and numerically different from a rate of return in DCF units, and using them together is a misuse of the measures.²²¹ Although the Commission recognizes that there is a difference between a rate of return reflective of market data and one based on book or accounting data,²²² it does not believe that APPA adequately demonstrated why it is inappropriate to apply a DCF-based allowed rate of return to a book value rate base.

APPA's argument seems to be that DCF-based allowed rates of return may produce lower book rates of return, which would "appear to be inadequate when in fact they may be acceptable or too high."²²³ However, the evidence offered by APPA is not sufficient to enable the Commission to make a finding on this point one way or the other. Moreover, without prejudging the issue, the Commission notes that there is reason to believe that the problem APPA cited is not significant when regulated utilities are involved.²²⁴

Finally as discussed below, it is not clear how APPA's suggested alternative method would resolve the problem it raised.

APPA's alternative method of calculating allowed rates of return would measure the cost of capital as the market returns experienced by equity holders in non-regulated industries minus an appropriate risk factor.²²⁵ No data was submitted, however, and no specific rate of return recommendation was made. In particular, APPA suggested using the weighted average return of a sample of unregulated industries for the most recent twelve month period. The allowed rate of return would be based on the price appreciation plus dividends received for the unregulated sample of common stocks. APPA would then adjust this realized rate of return for risk differences between the unregulated and electric utility industries.

On review of APPA's alternative method, it appears it is proposing what is essentially a DCF method since it is based on market returns in the form of dividends and price appreciation. Having presented arguments against using a DCF-based cost of capital, APPA nevertheless then suggested that a DCF-based cost of capital, in fact, be used. However, its DCF measure of the cost of capital suffers from a number of problems. It is based on realized rates of return, not expected rates of return. As such, it is potentially very volatile, swinging with the stock market's up and down cycles. Since expected rates of return are often not realized, particularly over short time periods, the use of a twelve month realized rate of return is likely to produce a distorted view of the rates of return currently expected, and required, by investors.²²⁶ Accordingly, the Commission finds that APPA's alternative method is not appropriate for estimating the industry average cost of equity.

V. Regulatory Flexibility Act

The Regulatory Flexibility Act (Act) requires Federal agencies to consider whether the rule will have a "significant economic impact on a substantial number of small entities." Nearly all of the jurisdictional utilities which must comply with the rule proposed here are too large to be considered "small entities" within the meaning of the Act.²²⁷ Also, since the utilities regulated

by the Commission hold exclusive selling rights within their service areas and are presumed to be natural monopolies, they dominate their respective fields of operation and cannot be considered to be "small entities" as the term is defined in the Act. The Commission finds, therefore, that the Act is not applicable to this rule because it will not affect a "substantial number of small entities."

VI. Timing of Annual Proceeding and Quarterly Updates and Effective Date of Rule

Ordinarily, the Commission would follow a specific time schedule for its annual proceedings on the benchmark rate of return. The Commission would publish a proposed rule by midsummer with the initial and reply comment period closing in early fall. The Commission would publish its order in the annual proceeding around January 1 and make it effective on February 1 in compliance with the requirement in the Administrative Procedure Act that rules be made effective thirty days after publication in the Federal Register (5 U.S.C. 553(d) (1982)).

In the annual proceeding, the Commission would establish a procedure which would be used to set the initial benchmark and to establish quarterly updates. The benchmark rates of return would ordinarily be published on or before the fifteenth of the month following the close of a calendar quarter. It would be made effective for three months beginning with the first day of the following month. For example, the Commission would publish on or before January 15 the benchmark rate of return applicable to the three month period, February 1 to April 30.

The fifteen day period between issuance and effective date would allow the public an opportunity to bring to the Commission's attention any errors in the computation of the quarterly update.

The Commission believes that it may make the quarterly benchmark effective without providing an opportunity for notice and comment and publishing it thirty days before it becomes effective. The determination of the benchmark will be based on a formula that was established in the annual proceeding for which notice and comment were provided and that was made effective thirty days after publication. Additionally, the Commission believes

²²¹ Initial Comments of APPA at 3-4. Reply Comments of APPA at 3-8.

²²² See Section IV.A.4.d above.

²²³ Initial Comments of APPA at 4.

²²⁴ See, e.g., Stewart Myers, "Finance Theory in Rate Cases," *The Bell Journal of Economics and Management Science*, Vol. 3, No. 1 (Spring 1972), p. 77 and footnote 38.

²²⁵ Initial Comments of APPA at 6-8.

²²⁶ For other problems with APPA's alternative method, see Reply Comments of Boston Edison et al. at 22-23.

²²⁷ The Act defines a "small entity" as a small business, a small not-for-profit enterprise, or a small

governmental jurisdiction. 5 U.S.C. 601(6) (1982). A "small business" is defined, by reference to Section 3 of the Small Business Act, as an enterprise which is "independently owned and operated and which is not dominant in its field of operation." 15 U.S.C. 632(a) (1982).

that, in order for the updating procedure to be timely and to track as closely as possible changes in the capital markets, it is necessary that this quarterly update be made effective without allowing notice and comment and the full thirty days required by the APA, 5 U.S.C. 553(d)(3) (1982).

In this first annual proceeding, the Commission is not following precisely the time schedule that it expects to follow in the future. In order to allow parties an adequate opportunity in this first annual proceeding to develop substantive comments and reply comments, the Commission expanded the comment period significantly beyond what it intends to allow in the future. As a result, the Commission will make this rule effective on July 1, 1985, rather than on February 1, as is contemplated for future annual proceedings.

Ordinarily, the first quarter following the close of an annual proceeding would run from February 1 to April 30. The second quarter would run from May 1 to August 31, etc. Because of the timing of the issuance of this first annual proceeding, the Commission is making its first benchmark rate of return effective during what would normally be the second quarter. Thus, this first benchmark determined in this first proceeding will only apply to the month of July. And the quarterly indexing procedure will only be used for determining the benchmarks for the three month periods beginning August 1 and November 1. In the future, however, the Commission will return to the schedule noted above.

List of Subjects in 18 CFR Part 37

Electric power rates, Electric utilities, Rate of return.

In consideration of the foregoing, the Commission amends Chapter I, Title 18 of the Code of Federal Regulations, as set forth below, effective 30 days after publication in the Federal Register.

By the Commission.
Kenneth F. Plumb,
Secretary.

PART 37—[AMENDED]

1. The authority citation for Part 37 continues to read as follows:

Authority: Federal Power Act, 16 U.S.C. 791a–825r (1982); Department of Energy Organization Act 42 U.S.C. 7101–7352 (1982).

2. Part 37 is amended by adding a new § 37.9 to read as follows:

§ 37.9 Quarterly Indexing Procedure.

(a) *Procedure for Determining Quarterly Benchmark Rates of Return.* In accordance with § 37.4, the Commission will use the following

indexing procedure to update quarterly the benchmark rate of return on common equity.

(1) The average cost of common equity for each three month period shall be calculated as follows:

$$k_t = a(y_t) + b$$

where

k_t = average cost of common equity for jurisdictional operations of public utilities for period t ;

a = first adjustment factor; adjustment factor to current dividend yield to account for the quarterly payment of dividends (determined in annual proceeding);

y_t = average current dividend yield for period t determined per subpart (b) below;

b = second adjustment factor; adjustment factor to account for expected growth, new common stock flotation costs and jurisdictional risk difference (determined in annual proceeding); and

t = successive three month time periods: February 1 through April 30, May 1 through July 31, August 1 through October 31, and November 1 through January 31.

(2) The benchmark rate of return on common equity for the first quarter to which an annual proceeding is applicable will be set equal to the average cost of common equity as determined by the formula of paragraph (a)(1) of this section.

(3) The benchmark rate of return on common equity for subsequent quarters prior to the next annual proceeding will be set equal to the average cost of common equity as determined by the formula of paragraph (a)(1) of this section, except where an increase or decrease of more than 50 basis points from the previous quarter's benchmark would occur.

(4) Where an increase or decrease of more than 50 basis points from the previous quarter's benchmark would occur, the change in the benchmark will be limited to 50 basis points.

(b) *Dividend Yield for Quarterly Benchmark Determination.* For use in the quarterly benchmark calculations, the average current dividend yield (y_t)

will be determined as the median of the current dividend yields of the sample of companies defined in paragraph (c) of this section, where the current dividend yield for company i for period t is defined as follows:

$$y_{ti} = \frac{D_{ti}}{P_{ti}}$$

where

D_{ti} = annual common dividend rate for company i based on the latest common dividend payment by ex-date as of the end of the most recent calendar quarter prior to period t ; and

P_{ti} = average of the monthly high and low common stock prices for company i for the most recent calendar quarter prior to period t .

(c) Sample of Companies Used to Calculate Quarterly Dividend Yields.

(1) Except as provided in paragraph (c)(2) of this section, the sample of companies used to calculate the average current dividend yield for the purpose of this section will be specified in the final order of each annual proceeding.

(2) Companies will be excluded from the sample used in the calculation of the dividend yield for any quarter if the following conditions occur:

(i) the company's common stock, through merger or other action, no longer is publicly traded, or

(ii) the company has decreased or omitted a common dividend payment in the current or prior three quarters, or

(iii) the Commission determines on a case-by-case basis that some other occurrence causes the dividend yield for that company to be substantially misleading and bias the resulting quarterly average.

(d) *Table of Quarterly Benchmark Rates of Return.*¹ The following table presents the quarterly benchmark rates of return on common equity:

Benchmark applicability period	First adjustment factor	Second adjustment factor	Current dividend yield	Cost of common equity	Benchmark rate of return
(t)	(a)	(b)	(y_t)	(k_t)	
7/1/85 to 7/31/85.....	1.02	4.36	9.90	14.46	14.46
8/1/85 to 10/31/85.....					
11/1/85 to 1/31/86.....					

¹ Note: Because of the time lag between the issuance of the quarterly updates to the benchmark rate of return and the publication of the Code of

Federal Regulations, the currently effective benchmark rate of return can be found in the Federal Register.

Note.—Appendices A, B, and C will not be shown in the Code of Federal Regulations.

APPENDIX A.—LIST OF COMMENTERS

Commenter	Abbreviations used in text
Alabama Electric Cooperative, Inc., et al.	Cooperatives.
American Electric Power Service Corp.	AEP.
American Public Power Association	APPA
Arizona Public Service Co.	APS
Associated Utility Services, Inc.	AUS.
Boston Edison Co., et al.	Boston Edison et al.
Carolina Power and Light Co.	CPL.
Cincinnati Gas and Electric Co.	CGE.
Dayton Power and Light Co.	DPL.
Detroit Edison Co.	Detroit Edison.
Duke Power Company	Duke.
Edison Electric Institute	EEL.
Financial Analysis Branch, Office of Electric Power Regulation, FERC.	FA Staff.
Florida Power and Light Co.	FPL.
General Services Administration	GSA.
Gulf States Utilities Co.	Gulf States.
Illinois Commerce Commission	Illinois Commission.

APPENDIX A.—LIST OF COMMENTERS—Continued

Commenter	Abbreviations used in text
Iowa-Illinois Gas & Electric Co.	Iowa-Illinois.
Kansas Power and Light Co.	KPL.
Middle South Utilities, Inc.	MSU.
New England Power Co.	NEP.
Northeast Utilities	NU.
Northern States Power Co.	NSP.
Pacific Lighting Utilities.	Pacific Lighting.
Pacific Power and Light Co.	PPL.
Potomac Electric Power Co.	PEPCO.
Public Service Co. of Colorado	PSCC.
Public Service Electric & Gas Co.	PSEG.
Public Service Co. of New Mexico	PNM.
Public Systems	Public Systems.
Public Utilities Commission of Colorado	PUCC.
Southern California Edison Co.	SCE.
Southwestern Electric Power Co.	SWEPCO.
Southwestern Public Service Co.	SPS.
Southern Company	Southern.
West Texas Utilities Co.	WTU.
Wholesale Customer Group.	WCG.

Definitions:

k = market required rate of return (annual rate)

D₀ = current (indicated) annual dividend rate

P₀ = current market price

g = dividend growth rate (annual rate)

D_t = dividend rate for quarter t; t = 1, 4

P_t = market price for quarter t; t = 1, 4

k' = market required rate of return (quarterly rate) where k = (1 + k')⁴ - 1

D₀ = current quarter dividend rate

g' = dividend growth rate (quarterly rate) = (1 + g)⁴ - 1

Appendix C—List of Sample Companies

1. Allegheny Power System
2. American Electric Power
3. Arizona Public Service Co
4. Atlantic City Electric
5. Baltimore Gas & Electric
6. Black Hills Power & Light Co
7. Boston Edison Co
8. Carolina Power & Light
9. Central & South West Corp
10. Central Hudson Gas & Electric
11. Central Illinois Public Service
12. Central Illinois Light
13. Central Louisiana Electric
14. Central Maine Power Co
15. Central Vermont Public Service
16. Cincinnati Gas & Electric
17. Cleveland Electric Illuminating
18. Commonwealth Edison
19. Commonwealth Energy System
20. Consolidated Edison of NY
21. Consumers Power Co
22. Dayton Power & Light
23. Delmarva Power & Light
24. Detroit Edison Co
25. Dominion Resources Inc-VA
26. Duke Power Co
27. Duquesne Light Co
28. Eastern Utilities Associates
29. Empire District Electric Co
30. Fitchburg Gas & Electric Light
31. Florida Progress Corp
32. FPL Group Inc
33. General Public Utilities
34. Green Mountain Power Corp
35. Gulf States Utilities Co
36. Hawaiian Electric Industries
37. Houston Industries Inc
38. Idaho Power Co
39. Illinois Power Co
40. Interstate Power Co
41. Iowa Electric Light & Power
42. Iowa Resources Inc
43. Iowa-Illinois Gas & Electric
44. IPALCO Enterprises Inc
45. Kansas City Power & Light
46. Kansas Gas & Electric
47. Kansas Power & Light
48. Kentucky Utilities Co
49. Long Island Lighting
50. Louisville Gas & Electric
51. Maine Public Service
52. Middle South Utilities
53. Midwest Energy Co
54. Minnesota Power & Light
55. Missouri Public Service Co

Appendix B—Proposed Constant Growth DCF Models

$$(1) k = \frac{D_0}{P_0} + g$$

$$(2) k = \frac{D_0 (1 + .5g)}{P_0} + g$$

$$(3) k = \frac{D_0}{P_0} \frac{[(1+g)^{-25} + (1+g)^{-5} + (1+g)^{-75} + (1+g)]}{4} + g$$

$$(4) k = \frac{D_0 (1+g)}{P_0} + g$$

$$(5) k = \frac{D_0}{P_0} \frac{[(1+k)^{-75} + (1+k)^{-5} + (1+k)^{-25} + 1]}{4} + g$$

$$(6) k = \frac{[D_{01}(1+k)^{-75} + D_{02}(1+k)^{-5} + D_{03}(1+k)^{-25} + D_{04} (1+g)]}{P_0} + g$$

$$(7) k = \left[\left(1 + \frac{D_{01}}{P_{01}}\right) \left(1 + \frac{D_{02}}{P_{02}}\right) \left(1 + \frac{D_{03}}{P_{03}}\right) \left(1 + \frac{D_{04}}{P_{04}}\right) - 1 \right] + g$$

$$(8) k' = \left[\left(1 + \frac{D_0}{P_0}\right)^{.25} - 1 \right] + g'$$

$$(9) k' = \frac{D_0}{(1+g')} + g'$$

56. Montana Power Co
57. Nevada Power Co
58. New England Electric System
59. New York State Electric & Gas
60. Newport Electric Corp
61. Niagara Mohawk Power
62. Northeast Utilities
63. Northern Indiana Public Service
64. Northern States Power-MN
65. Ohio Edison Co
66. Oklahoma Gas & Electric
67. Orange & Rockland Utilities
68. Pacific Gas & Electric
69. PacifiCorp
70. Pennsylvania Power & Light
71. Philadelphia Electric Co
72. Portland General Electric Co
73. Potomac Electric Power
74. Public Service Co of Colo
75. Public Service Co of Ind
76. Public Service Co of NH
77. Public Service Co of N Mex
78. Public Service Electric & Gas
79. Puget Sound Power & Light
80. Rochester Gas & Electric
81. San Diego Gas & Electric
82. Savannah Electric & Power
83. SCANA Corp
84. Sierra Pacific Resources
85. Southern California Edison Co
86. Southern Co
87. Southern Indiana Gas & Electric
88. St Joseph Light & Power
89. Teco Energy Inc
90. Texas Utilities Co
91. TNP Enterprises Inc
92. Toledo Edison Co
93. Tucson Electric Power Co
94. Union Electric Co
95. United Illuminating Co
96. Utah Power & Light
97. Washington Water Power
98. Wisconsin Electric Power
99. Wisconsin Power & Light
100. Wisconsin Public Service

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DEPARTMENT OF THE TREASURY

Customs Service

19 CFR Part 24

[T.D. 85-93]

Calculation of Interest on Overdue Accounts and Refunds

AGENCY: Customs Service, Department of the Treasury.

ACTION: Notice of Calculation of Interest.

SUMMARY: This notice advises the public, that, in order to implement two provisions of the recently enacted Trade and Tariff Act of 1984, interest on applicable overpayments or

underpayments of Customs duties shall be in accordance with the Internal Revenue Code rate established in 26 U.S.C. 6621 and 6622. This determination covers antidumping and countervailing duty payments, and increased or additional duties determined to be due on a liquidation or reliquidation. In addition, it has been determined that a uniform interest payment system should be established and that refunds pursuant to a court determination and payable under 28 U.S.C. 2644, and interest on overpayments and underpayments of estimated excise taxes determined at liquidation, shall be assessed at the rate(s) prescribed under 26 U.S.C. 6621 and 6622.

EFFECTIVE DATES: (1) October 30, 1984:

For all underpayments and overpayments of countervailing or antidumping duties and all refunds of amounts paid as increased or additional duties which had been determined to be due upon a liquidation or reliquidation.

(2) November 29, 1984: For liquidations or reliquidations on or after this date upon which increased or additional duties are due.

(3) May 29, 1985: For refunds of amounts of overpayments or underpayments of excise taxes assessed pursuant to 26 U.S.C. 6423.

FOR FURTHER INFORMATION CONTACT:

Robert Hamilton, Accounting Division, Office of the Comptroller, U.S. Customs Service, 1301 Constitution Avenue NW., Washington, D.C. 20229 (202-566-2596).

SUPPLEMENTARY INFORMATION:

Background

On October 30, 1984, the President signed Pub. L. 98-573, the Trade and Tariff Act of 1984. Section 621 of that Act amended section 778, Tariff Act of 1930, as amended (19 U.S.C. 1677g), to require that interest shall be payable on overpayments and underpayments of amounts deposited on merchandise entered, or withdrawn from warehouse for consumption, on or after the date of publication of a countervailing or antidumping order, or the date of a finding under the Antidumping Act, 1921. The rate of interest payable for any period of time is the rate of interest established under section 6621 of the Internal Revenue Code of 1954 (26 U.S.C. 6621), for such period. It is clear from the legislative history that the rate of interest is to fluctuate based upon the semiannual determinations made under section 6621 and that the rate for both refunds and payments shall be compounded as provided for in section 6622 of the Internal Revenue Code of 1954 (26 U.S.C. 6622).

Section 210 of Pub. L. 98-573 amended section 505, Tariff Act of 1930, as

amended (19 U.S.C. 1505), to provide that increased or additional duties, determined to be due upon a liquidation or reliquidation, are due 15 days from that date and if not paid within 30 days after their due date (the 45th day), shall be considered delinquent and bear interest from the due date (15th day after liquidation or reliquidation) at a rate determined by the Secretary of the Treasury. Section 210 also amends section 520, Tariff Act of 1930, as amended (19 U.S.C. 1520), to require the Government to pay interest to an importer on amounts paid as increased or additional duties, based upon a liquidation or reliquidation, if that money is ultimately refunded pursuant to the granting of a protest or as a result of a court decision. The rate of interest to be payable shall be the same as was determined or would have been assessed pursuant to the changes to 19 U.S.C. 1505. By this document, the rate is determined to be the Internal Revenue Code rate established by 26 U.S.C. 6621 and 6622, for any period of time that such sums are outstanding. In effect, the rate will be adjusted based upon the semiannual determinations under section 6621 and be compounded daily in accordance with section 6622. This provision does not affect overpayments or underpayments of estimated duties under 19 U.S.C. 1505(a). The rate of interest for the period of January 1, 1985-June 30, 1985, is 13 percent as set out in an Internal Revenue Service directive. This rate is subject to change twice a year on January 1 and July 1. The current rate at any time may be obtained from the Internal Revenue Service or any Regional Customs Financial Management Office.

Under the judicial procedures set forth in 28 U.S.C. 2644, when a plaintiff obtains monetary relief on a judgment or by stipulation on a case filed in the U.S. Court of International Trade under 19 U.S.C. 1515, interest is allowed at an annual rate established under 26 U.S.C. 6621. As this section was passed prior to the compounding provisions of 26 U.S.C. 6622, Customs has been paying such interest only under the simple interest provisions of 26 U.S.C. 6621. However, in order to establish consistency between the provisions of the Antidumping and Countervailing Duty Acts, section 210 of Pub. L. 98-573, and 28 U.S.C. 2644, it has now been determined to apply the compounding of interest provisions to the refund of duties authorized by 28 U.S.C. 2644.

It also has been determined that the refund of overpayments or underpayments of excise taxes assessed pursuant to 26 U.S.C. 6423 are deemed to

include the interest applicable to the taxes pursuant to 26 U.S.C. 6611(a). Consequently, interest on overpayments or underpayments of estimated excise taxes determined at liquidation shall be assessed at the rate(s) prescribed under 26 U.S.C. 6621 and 6622. For overpayments interest will be computed from the date of overpayment to the date of refund (entry liquidation date). For underpayments, interest will be computed from the date the initial payment was due to the date full payment is made.

Determination

In accordance with the effective dates established by this notice, all interest either due or payable on overpayment or underpayment of Customs duties shall be in accordance with the Internal Revenue Code rates established by 26 U.S.C. 6621 and 6622. In accordance with those sections, the interest shall be adjusted in accordance with the period that the money is outstanding and shall be compounded daily where applicable. Appropriate amendments to the Customs Regulations will be the subject of a future document.

Drafting Information

The principal authors of this document were Arthur I. Rettinger, Office of the Chief Counsel, and Glen E. Vereb, Office of Regulations and Rulings, Customs Headquarters. However, personnel from other Customs offices participated in its development.

Dated: May 21, 1985.

William von Raab,

Commissioner of Customs.

[FR Doc. 85-12720 Filed 5-28-85; 8:45 am]

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DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 177

[Docket No. 82F-0374]

Indirect Food Additives: Polymers

AGENCY: Food and Drug Administration.

ACTION: Final rule.

SUMMARY: The Food and Drug Administration (FDA) is amending the food additive regulations to provide for an increase in the level of butene-1 in ethylene/butene-1 copolymers to be used in blends with other permitted polyolefins. This action responds to a petition filed with Mitsui Petrochemical Industries, Ltd.

DATES: Effective May 29, 1985; objections by June 28, 1985. The Director of the Federal Register approves the incorporation by reference of certain publications in 21 CFR 177.1520, effective on May 29, 1985.

ADDRESS: Written objections to the Dockets Management Branch (HFA-305), Food and Drug Administration, Rm. 4-62, 5600 Fishers Lane, Rockville, MD 20857.

FOR FURTHER INFORMATION CONTACT: Rudolph Harris, Center for Food Safety and Applied Nutrition (HFF-334), Food and Drug Administration, 200 C St. SW., Washington, DC 20204, 202-472-5690.

SUPPLEMENTARY INFORMATION: In a notice published in the Federal Register of January 4, 1983 (48 FR 335), FDA announced that a petition (FAP 3B3674) had been filed by Mitsui Petrochemical Industries, Ltd. (No. 2,3-Chome, Kasumigaseki, Chiyoda-ku Tokyo, Japan) proposing that § 177.1520 Olefin polymers (21 CFR 177.1520) be amended to provide for an increase in the butene-1 content in ethylene/butene-1 copolymers for use in blends with other olefin copolymers intended for use in contact with food.

FDA has evaluated data in the petition and other relevant material and concludes that the proposed food additive use is safe and that the regulations should be amended as set forth below.

In accordance with § 171.1(h) (21 CFR 171.1(h)), the petition and the documents that FDA considered and relied upon in reaching its decision to approve the petition are available for inspection at the Center for Food Safety and Applied Nutrition (address above) by appointment with the information contact person listed above. As

provided in 21 CFR 171.1(h), the agency will delete from the documents any materials that are not available for public disclosure before making the documents available for inspection.

The agency has carefully considered the potential environmental effects of this action and has concluded that the action will not have a significant impact on the human environment and that an environmental impact statement is not required. The agency's finding of no significant impact and the evidence supporting that finding may be seen in the Dockets Management Branch (address above) between 9 a.m. and 4 p.m., Monday through Friday.

List of Subjects in 21 CFR Part 177

Food additives, Incorporation by reference, Polymeric food packaging.

Therefore, under the Federal Food Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs and redelegated to the Center for Food Safety and Applied Nutrition, Part 177 is amended as follows:

PART 177—INDIRECT FOOD ADDITIVES: POLYMERS

1. The authority citation for Part 177 continues to read as follows:

Authority: Secs. 201(s), 409, 72 Stat. 1784-1788 as amended (21 U.S.C. 321(s), 348); 21 CFR 5.10 and 5.61.

2. In § 177.1520 by adding new paragraph (a)(3)(v), by adding new 3.6 in the table in paragraph (c), and by adding new paragraph (d)(7) to read as follows:

§ 177.1520 Olefin polymers.

* * *

(a) * * *

(3) * * *

(v) Ethylene and butene-1 copolymers (CAS Reg. No. 25087-34-7) that shall contain not less than 80 weight percent of polymer units derived from ethylene.

* * *

(c) * * *